DEATH TO EINSTEIN!

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EXPOSING THE FATAL FLAWS OF EINSTEIN'S CELEBRATED THEORY

SCOTT REEVES

EINSTEIN IS DEAD ON ARRIVAL

This is not a book to explain Einstein's theory of relativity to newcomers. This is a book to debunk the theory, and I'm going to jump right into the debunking.

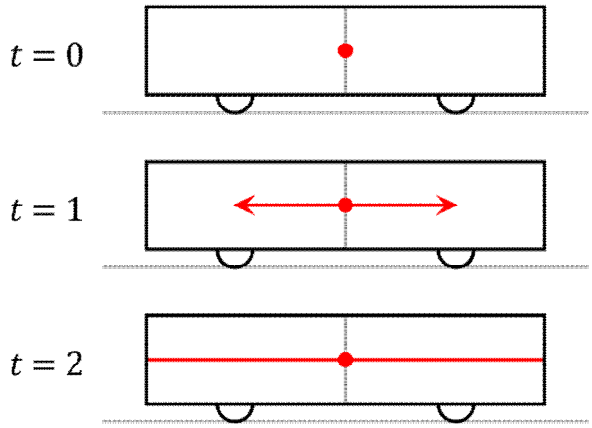
If the reader is unfamiliar with relativity, I would direct him/her to wikipedia.com, or any other source where the relevant information can be found. Particularly, I recommend studying the following subjects: the relativity of simultaneity, the Twins paradox, and time dilation. These are the three elements I am going to use to pit relativity against itself.

If you already possess, or have now gained through study, an understanding of the subject, I hope that we can agree upon the following statement:

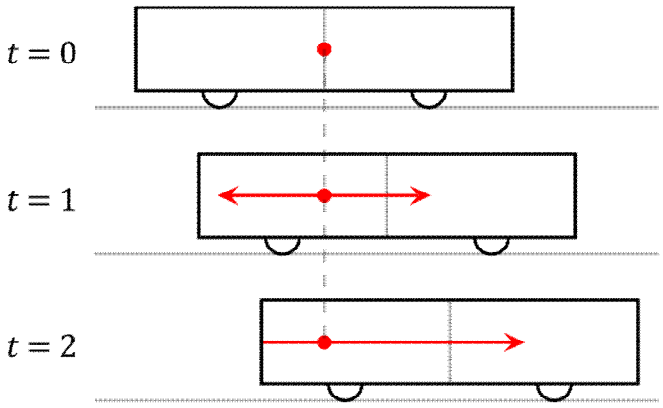
Statement #1: According to special relativity's relativity of simultaneity thought experiments, an Observer A, who regards himself as stationary relative to a moving Observer B, regards the point(s) at which the light pulses are emitted from Observer B's light bulb as remaining stationary relative to himself (Observer A).

This says nothing about the state of motion of the light source, merely the state of motion of where the light source was when its pulses were emitted. And those points of emission remain stationary relative to whichever observer regards himself as stationary, even as the emitter itself moves on or remains stationary, depending upon its relation to the observer who regards himself as stationary.

For added convenience, I will here include relevant diagrams from Wikipedia's "Relativity of Simultaneity" article, used under a



The above diagram is the situation from the viewpoint of an observer on the train, while the diagram below is from the viewpoint of an observer on the train platform who regards the train as in motion relative to himself. Clearly, in the diagram below, the point of emission (dashed line) is remaining stationary with the platform's observer.

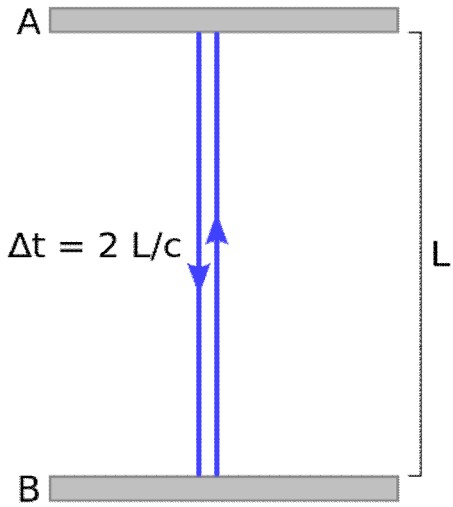


I will now make a second statement based upon the time dilation diagrams from Wikipedia.org's article on "Time Dilation":

Statement #2: According to the manner in which special relativity derives time dilation, an Observer A, who regards himself as stationary relative to a moving Observer B, regards the light pulses emitted by Observer B's light clock to be moving along with Observer B's light clock.

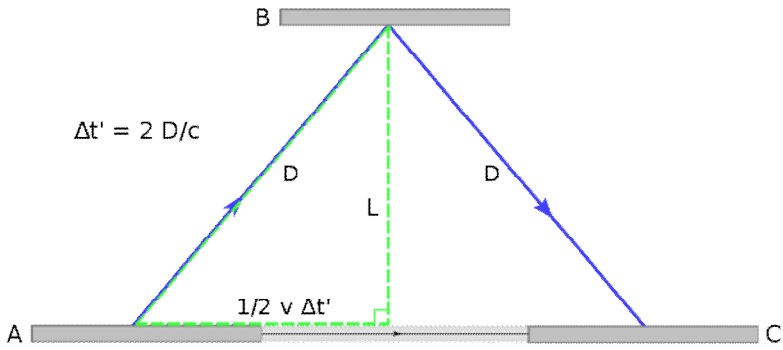
That is to say, Observer A regards the points at which Observer B's light clock emits its pulses to be moving along with the light clock.

For added convenience, I will here include the relevant time dilation diagrams from Wikipedia.



The above diagram is from the viewpoint of the observer who is stationary relative to the light clock, while the diagram on the following page is from the viewpoint of an observer in motion relative

to the light clock.



Very clearly, the observer in motion relative to the light clock regards the light pulse (and its point of emission) as moving along with the clock.

Here is a third statement:

Statement #3: Statement #1 and Statement #2 are mutually contradictory.

In other words, if we allow time dilation, then the relativity of simultaneity must be disallowed, and vice versa. Both phenomena can't possibly be true, because they're each based on a conflicting idea regarding the state of motion of the light pulses. In the relativity of simultaneity, the emission points of light pulses are held to remain stationary relative to both users, while in time dilation, the emission points of light pulses are held by a stationary observer to be in motion along with the moving emitter.

This is in conflict! This is not Scott Reeves misunderstanding relativity. This is an actual conflict that supporters of relativity either fail to see, or simply ignore. But it is a fatal flaw in special relativity itself!

Relativity attributes different, contradictory behaviors to light depending upon whether the subject under discussion is time dilation or the relativity of simultaneity. Relativity's own thought experiments thus disprove either time dilation or the relativity of simultaneity. Take your pick which. Simultaneity disproves time dilation, or vice versa.

Let me try to explain it in more depth unless I haven't managed to get my point across.

In each relativity-of-simultaneity thought experiment (train-and-embankment and lightning strikes), when the platform's observer considers himself to be stationary and the train to be in motion, the platform's observer also sees the train car moving relative to the point(s) at which the light was emitted, either from bolts of lightning or a light bulb. Likewise, the observer at the center of, and stationary relative to, the train car, considering himself to be stationary, sees the platform in motion relative to the point(s) at which the light was emitted.

In both cases, each observer sees himself as stationary relative to the point(s) at which the light was emitted.

Stressed Point # 1: *In the relativity-of-simultaneity experiments, each observer claims that the other is in motion relative to the point(s) at which the light was emitted, while believing himself to be stationary relative to the point(s) at which the light was emitted.*

How, then, can each observer claim that the other observer is experiencing time dilation, given the standard explanation of how each observer claims that the other observer is experiencing time dilation?

Look at the time dilation diagrams yet again if you still don't understand or believe me.

According to relativity, the observer moving relative to the light clock will determine that an observer stationary relative to the light clock is experiencing time dilation, since the moving observer measures the light as taking a longer path than the path which the stationary (relative to the light clock) observer measures. Both must measure the same speed for light, so the one measuring a longer path (observer in motion relative to light clock) will calculate that more time has elapsed for him than for the one measuring the shorter path.

All very simple and standard stuff, right, despite my convoluted but correct explanation?

The only problem is, time dilation conflicts with the logically derived conclusion from the relativity-of-simultaneity experiments (train-and-platform and lightning strikes). According to my Stressed Point # 1, the moving observer (relative to the light clock) should believe the points at which the pulses from the light clock were emitted are stationary relative to himself. Yet in the derivation of time dilation, he considers the points at which the pulses were emitted from the light clock to be in motion relative to himself, but stationary relative to the moving observer.

The standard thought experiments used to explain the relativity of simultaneity thus completely preclude the derivation of time dilation. If simultaneity really is relative, then time dilation as usually explained is impossible. And if time dilation is impossible, then relativity is demolished.

The only feature that both simultaneity experiments accurately rely upon, namely that the points at which light pulses are emitted remain stationary relative to the observer who regards himself as stationary, is completely ignored when the observer in motion relative to a light clock makes a determination that the other observer is experiencing time dilation. In the relativity of simultaneity thought experiments, the emission points from a light source remain stationary relative to each observer, but in the derivation of time

dilation, the emission points from a light source in motion are in motion relative to a stationary observer. Thus, the third most widely used illustration of special relativity conflicts with the first two most widely used thought experiments.

Simply put, **the conclusions of special relativity are built upon conflicts between special relativity's own thought experiments themselves!**

I'm fond of trying to explain the same point multiple times in multiple different ways, in case I haven't explained myself clearly in one example. So here is another example of the same idea: let's say our rocket has both a light clock and a light bulb at the central location. (You can also do this with light bulbs located on the fore and aft walls, to simulate lightning strikes). According to the train-and-embankment example, our stationary observer outside the rocket will see the light from the central bulb heading toward a front wall that is receding from the forward beam, and a back wall that is approaching the aft beam. At the same time, the beam from the rocket's light clock will be shooting from the floor up toward the ceiling. Ask yourself this question: how can the outside, stationary observer see the front wall receding from the beam emitted by the central light bulb, even as he sees the beam from the floor shooting up toward a precise spot on the ceiling, a beam which keeps pace with that point until it strikes it? The point on the ceiling is attached to same hull of which the front wall is a part, yes? So if the front wall is receding from the central light beam, then the spot on the ceiling that is directly across from the spot on the floor from which the light clock beam was emitted should also move forward in the time it takes the light beam to travel from the floor to the ceiling. The light beam shining from the floor to the ceiling cannot keep pace with the spot on the ceiling even as the front wall recedes from the beam shining from the central bulb. It's inconsistent, not to mention physically impossible.

Another example related to the above: just picture a single light

bulb attached to a socket on the floor of the rocket. Picture the "beam" as a spherical wavefront that expands toward the front, rear, and ceiling of the rocket. Either this expanding circle keeps pace with the light bulb, remaining centered on the moving light bulb, or it remains centered on where the light bulb was when the spherical pulse was emitted. If it remains centered on where it was when emitted, then the top of the circle will strike a point on the ceiling located behind the point that is directly above the light bulb. A point on the rearward side of the spherical pulse will strike the rear wall, and a time later, a point on the spherical pulse will strike the front wall.

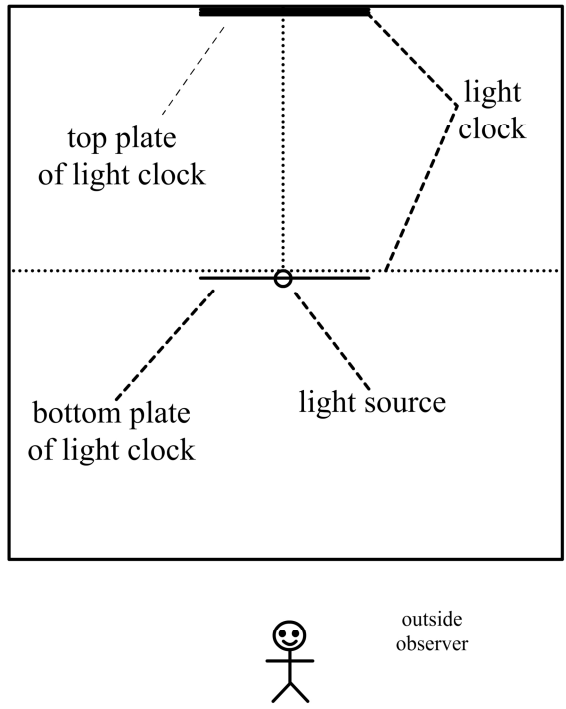
If, on the other hand, the spherical pulse keeps pace with the light bulb, then a point on the top of the circle will strike a point on the ceiling that is directly above the light bulb; and the pulse will strike the front and rear walls at the same time.

Einstein and his followers mix the two, saying that in the case of the pulse directed from floor to ceiling (light clock), the pulse keeps pace with the light bulb, while in the case of the fore-and-aft-directed pulse (simultaneity), the pulse remains centered on where the light bulb *was* when the pulse was emitted.

It is a physical impossibility to mix the two, as I hope the reader can understand.

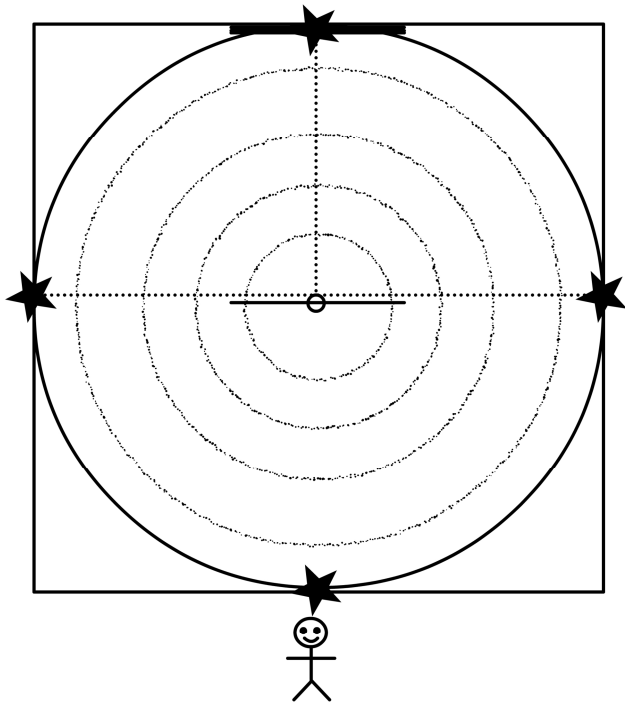
Let me use diagrams of my own to show the light clock and the relativity-of-simultaneity experiments combined into one.

Instead of a "normal" rocket ship or a train car, I'm going to use a perfectly square, cube-shaped ship, with the bottom half of the light clock midway between the ceiling and the floor (deck, whatever). Imagine it as a Borg cube from *Star Trek: the Next Generation* if you'd like.



The Setup - cube ship and outside observer

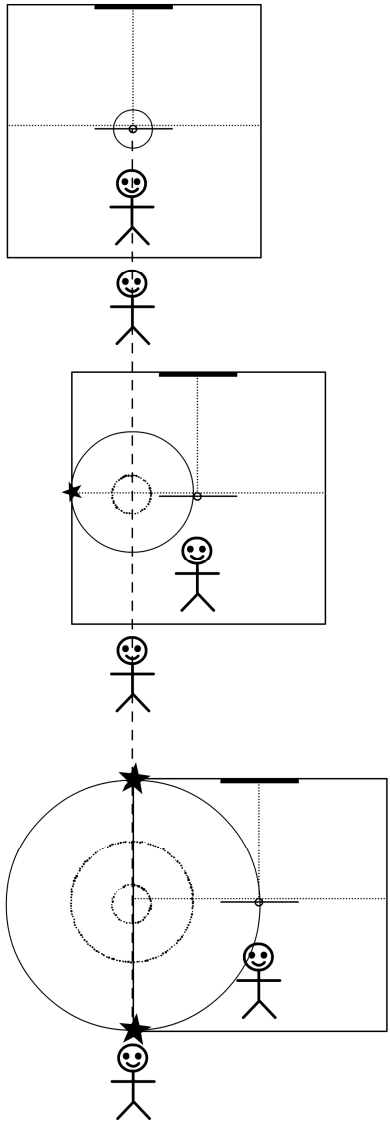
The above diagram gives the setup and description of the various parts of my thought experiment. Neither this nor the following diagrams are to scale, of course, and, as in the relativity diagrams from Wikipedia, length contraction is not depicted. We'll call this Diagram #1. Figure that the top and bottom plates of the light clock are mirrors to reflect the pulses of the light clock, just as expected. Also, the three dotted lines extending from the light source to the walls and ceiling are merely visual aids for convenience.



No relative motion, one pulse has been
emitted from clock and has struck ceiling, fore, aft, and floor.

The above diagram shows one pulse having been emitted from the light clock. There is no relative motion between the outside observer and the clock. Keep in mind that this is a combination of both the light clock and the train-and-platform experiment. Also note that a light wave is used, rather than single photons of light as in the famous thought experiments. And note that there are not multiple light waves represented, but rather one wave is shown over time, radiating outward from the light bulb to strike the walls, floor and ceiling simultaneously for both inside and outside observers, said strikes being indicated by stars. The grainy circles are past locations of the wave front, while the solid circle is the current location of the wave front. Also, this is theoretically how an observer inside the cube will

view things, even if there is relative motion between the two observers. We'll call this Diagram #2.



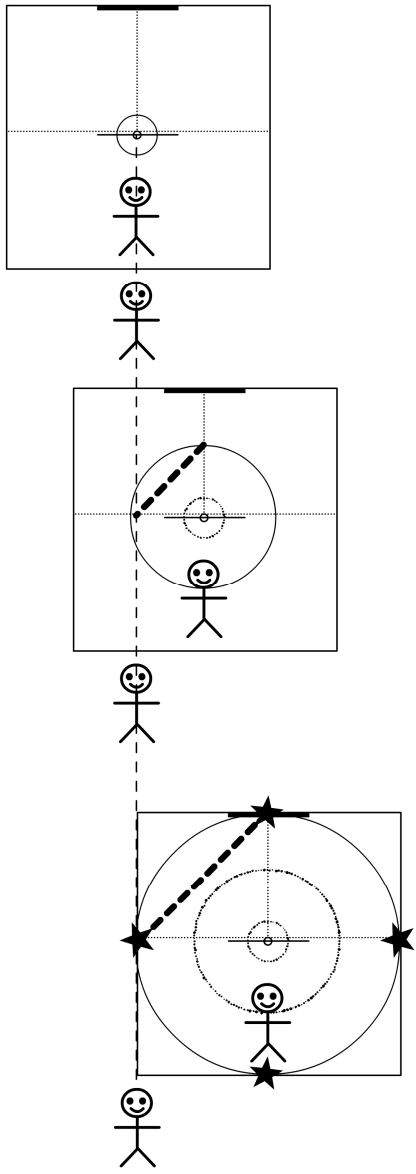
The above diagram, which we'll call Diagram #3, is from the

viewpoint of the outside observer. Of course this and the following diagram aren't to scale; the magnitude of the light's displacement is obviously greatly exaggerated, but this in no way invalidates the point being made.

Anyway. In this diagram, we have the same situation as described in Wikipedia's diagram where there is relative motion between the train and the observer on the embankment. The results are exactly the same as those in the Wikipedia diagram, except in mine, we have a cube-shaped ship of equal lengths fore-aft and up-down, and we're using a light wave that radiates in all directions. The point where the light wave first connects with a wall, ceiling or floor is essentially a photon striking the same spot. After all, light is both a wave and a particle—basic physics. So there's no misrepresentation here. There is absolutely no reason we can't use a radiating light wave instead of a single photon. Note that in the diagram, the outside observer sees the light strike the rear wall first, while the forward wall has yet to be struck. Also note that not only do they disagree about the simultaneity of the light striking the fore and aft walls (inside observer sees strikes as simultaneous, according to relativity), they also disagree about the *location* of where the light wave makes tangent angles with the ceiling and the deck of the ship!

From Diagram #3, it should also be obvious what else is wrong: the outside observer can't measure a longer path for the light than does the observer in the ship. **There's no way for the outside observer to claim time is dilated for the observer inside the cube!** Because remember, this is a combination of both the light clock and the train-and-embankment experiment. The upward part of the wave is the upward leg of the light clock. We should be able to switch between both train-and-embankment and light clock experiments. The only problem is **the pulse doesn't strike the upper plate of the light clock directly above the light source!** It strikes to the rear! This is because for time dilation, relativity

instead uses the following diagram:



We'll call this Diagram #4. Same situation as Diagram #3, except now we're looking at it from relativity's time-dilation perspective.

Note that this portrays just one leg of the light clock's journey up and down from the perspective of the outside observer (thick dashed diagonal line). All is as it should be; same diagram as the Wikipedia light clock diagrams. The outside observer will measure a longer path for the light and claim that time is dilated for the observer inside the cube ship. The only problem is **there's no disagreement on simultaneity! Both observers say the light strikes the walls, ceiling and deck at the same time!**

Note that in the relativity-of-simultaneity diagrams, the outside observer sees the light pulse strike the ceiling aft of where he sees it strike the ceiling in the time dilation diagram. This is because in the former case, he regards the light pulse as remaining stationary relative to himself, while in the latter case he regards the light pulse as remaining stationary relative to the observer inside the cube ship. The problem is that the light pulse can't strike two different places on the ceiling of the cube ship dependent upon whether the outside observer is considering simultaneity or time dilation. It's physically impossible!

Note also that in my four diagrams, we are examining things solely from the viewpoint of the outside observer. The inside observer, according to relativity, sees the reverse, drawing the same conclusions about the outside observer that the outside observer draws about the inside observer.

Is the conflict now clear? Utterly, devastatingly clear? It should be. Relativity can't combine the light clock and the train-and-embankment experiments—which it *should* be able to do with no problem—because **they aren't compatible**. Each experiment disproves the other! Each one attributes a different behavior to light under the same circumstance, namely, relative motion.

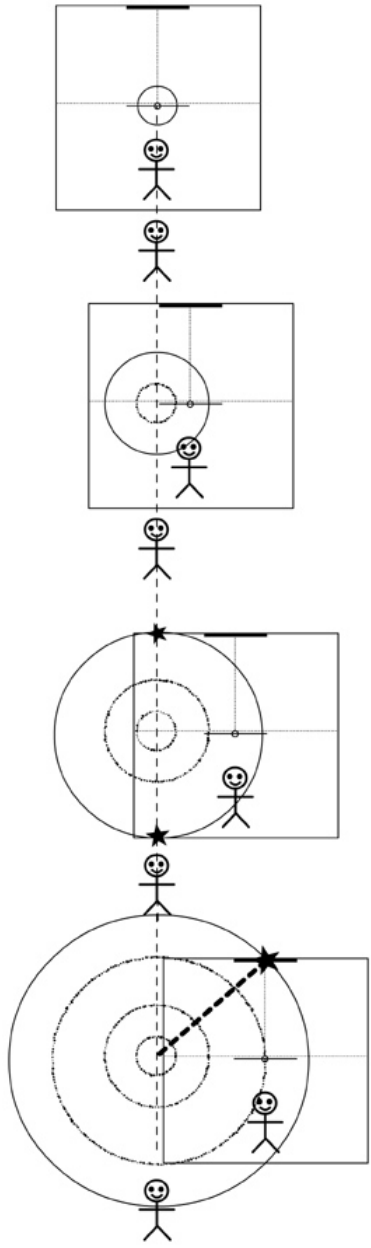
Boom! Einstein has just been run over by that darn train of his.

You cannot claim that I am misrepresenting or misunderstanding things here. The only, ONLY, difference is that I'm using a light wave

rather than a single photon as in relativity's thought experiments, and a cube-shaped ship with equal dimensions.

So, the light clock gives time dilation. The train-and-embankment gives relativity of simultaneity. You can have one or the other, but unfortunately for Einstein's supporters, you can't have both.

Admittedly, there is an objection that can be made to my representation as illustrated by Diagram #4. The objection is that *I* am the one who is making the light wave move along with the cube ship, and that the correct diagram would be as on the following page:



I'll call the above Diagram #5. As you can see, the light wave remains motionless relative to the outside observer. Diagram #5 also

allows for the relativity of simultaneity, since the outside observer sees the light strike the rear wall of the ship first. Thus, both observers disagree as to simultaneity: the observer inside the ship says the light strikes the walls at the same time, while the outside observer says the light strikes the rear wall first. The outside observer also derives time dilation, since he sees the light follow a longer path than does the inside observer. So Diagram #5 is a true combination of the light clock and the relativity of simultaneity diagrams.

But if, as our hypothetical objector claims, Diagram #5 is the correct representation rather than Diagram #4, then we have a whole different boatload of problems.

The most obvious: the light paths are not the same. And I don't mean in the obvious sense that the hypotenuse is longer than the vertical path. I mean that the paths are not the same in that the outside observer must claim that the light which strikes the upper plate of the light clock was emitted from the source at a forty-five degree angle, while the inside observer claims that the light was emitted from the source straight up and down (or at a ninety-degree angle). Clearly, the two observers are not measuring the same light path, and so the use of the light clock to measure time is suspect from the outset. If the observer inside the rocket were to likewise measure the light path at a forty-five degree angle from the source, he too would get a different measurement for time, since he would measure from the light source to the upper forward corner of his cube ship, rather than measuring from the light source to a point on the ceiling (the upper plate of the clock) directly above the light source.

If Diagram #5 is taken to be the correct diagram, then we are also presented with a new disproof of relativity, as I shall outline below.

Let's say that we have a strange sort of light bulb as our light source for the clock. This bulb emits a different sort of photon at each degree. For example, at ninety degrees, it emits a photon of a type "A," whatever hypothetical property "A" might be. At eighty-nine

degrees the light bulb emits a photon of type "B," and so on, until at forty-five degrees, a photon of type "AX" is emitted. Is this clear? At each degree around the light bulb, a different, distinct type of photon is emitted, such that if we encounter a particular type of photon, we can be certain that it was emitted from a particular degree of the light bulb.

According to Diagram #5, the outside observer will claim that a photon of type AX strikes the upper plate of the light clock inside the cube ship. Conflictingly, and in keeping with the principle of relativity, the inside observer will claim that a photon of type A has struck the upper plate.

How can they both be correct in their claim that the same identical event, namely one particular strike of a photon against the upper plate, involves a different sort of photon? It's as if Joe Smith is punched in the face, but who threw the punch depends upon whether you're viewing the event from Steve's perspective or Ralph's perspective. Steve sees Luis throw the punch, while Ralph sees Herman throw the punch.

Excuse me, but is this not a physical impossibility?

Is it not more likely, and more within the realm of logic, that the observer inside the rocket will expect a photon of type A to hit the upper plate, but will instead find, in complete agreement with the outside observer, that a photon of type AX has struck the plate? The inside observer will be forced to conclude that he is in motion, since that's the only explanation of how a photon emitted at a forty-five degree angle could strike directly above the light bulb.

I can already hear the next objection: Scott, Scott, you misguided fool, photons don't have the hypothetical properties you're using in your illustration. One type of photon is empirically indistinguishable from another. Thus, your whole thought experiment falls apart at the outset.

And my response is: incorrect. There doesn't need to be an

empirical difference between photons. We can simply use a directed source, such as a laser, for our light clock, so that the beam only shines in one direction, rather than radiating in all directions. Set the source at an appropriate angle, and observe where it strikes the ceiling of the cube ship. If it's directed upward at a ninety-degree angle, does it strike the ceiling directly above the source, or slightly to the rear? Or, if angled toward the front of the ship, will the beam strike the ceiling further aft than expected?

And the next objection: Scott, Scott, you misguided fool. We've already done such an experiment, or at least a very similar one. Michelson-Morley, remember?

My response: Yes, I do indeed remember, and I will be addressing this point later in the book. So keep reading.

And a final objection: Scott, Scott, you misguided fool! You sure are slipping liberally between waves and individual photons.

My response: So what? That doesn't affect the validity of what I'm saying.

So, to continue, our hypothetical objector is free to choose between either Diagram #4 or Diagram #5, but must concede that *either* situation leads to fatal problems for relativity. Diagram #4 precludes the possibility of the relativity of simultaneity, while Diagram #5 allows one to directly detect who is really in motion, which completely destroys relativity.

I think either the relativity of simultaneity or time dilation has been very convincingly shown to be dead upon arrival. Einstein and his followers doomed one or the other themselves; they just didn't realize it.

Oh, wait a minute! They're *both* doomed, because they're inextricably intertwined. You can't have one but not the other, because if you take away time dilation, there will be no constancy of light speed for all observers. And if you choose time dilation and throw away the relativity of simultaneity, then you've doomed

relativity due to a problem I'm going to outline in the next chapter.

Because time dilation itself, as described by relativity, has a fatal error of its own that has been staring physicists in the face for over a hundred years.

I call time dilation's fatal error "The Photon Mapping Problem."

THE PHOTON MAPPING PROBLEM

Or

DEATH TO SPECIAL RELATIVITY!

Statement #4: The emission of photons is a physical process, and as such, will be affected by time dilation, if time dilation actually occurs in reality. *(Nothing new here; I'm just stating a widely accepted fact of relativity).*

A standard light bulb will emit X number of photons in a given period of time T. The same standard light bulb in uniform motion at a significant fraction of c relative to an observer O will emit the same X number of photons over a longer period of O's time due to time dilation (in accordance with Statement #4). A stationary detector near observer O will be struck by the photons from the moving light bulb (MLB) at specific times over the course of O's observance of MLB.

Observer O is seated next to a stationary light bulb (SLB) of a type that is identical to MLB. Observer P is in uniform motion relative to observer O, but stationary relative to MLB. In fact, observer P is seated next to MLB. Each observer is noting the time that each individual photon from the light bulb in motion relative to him strikes his respective detector.

When observer O determines that X number of photons have been emitted from his own light bulb (SLB), he notes that T has elapsed. He further determines that the same X number of photons has not yet been emitted from MLB, due to time dilation, so he waits.

When he determines that the same X number of photons has been emitted from MLB, he notes that T2 has elapsed.

Observer P follows a similar process.

In other words, each observer notes that each photon from the other observer's light bulb "maps" to a specific time in his own reference frame.

According to Special Relativity, the following conversation will ensue when the two observers get back together and compare notes.

Observer O: "Observer P, of our agreed-upon batch of X number of photons, the final photon from your light bulb struck my detector at T2 into the experiment, while I calculate that the final photon from my light bulb struck your detector at T into the experiment."

Observer P: "No. The reverse is true. My observations and calculations show that *my* final photon struck *your* detector at T into the experiment. Further, it was *your* final photon that struck *my* detector T2 into the experiment."

They both then laugh, congratulating themselves upon yet another successful experiment that has confirmed Einstein's grand theory.

But obviously they have not confirmed Relativity, because both of them cannot be correct. It is ridiculous and, more than likely, physically impossible that the same photon in question can strike a detector at a different time, depending upon who observes the photon.

This problem is not merely a case of the one clock ticking slower than the other due to time dilation. If Relativity is actually true, each observer will claim that a given photon from either light bulb strikes a given detector at a different point in either his or the other's timeline. Observer O will say a particular photon struck a given detector HERE in that detector's timeline, while Observer P will say the same photon struck the same detector THERE in the detector's timeline.

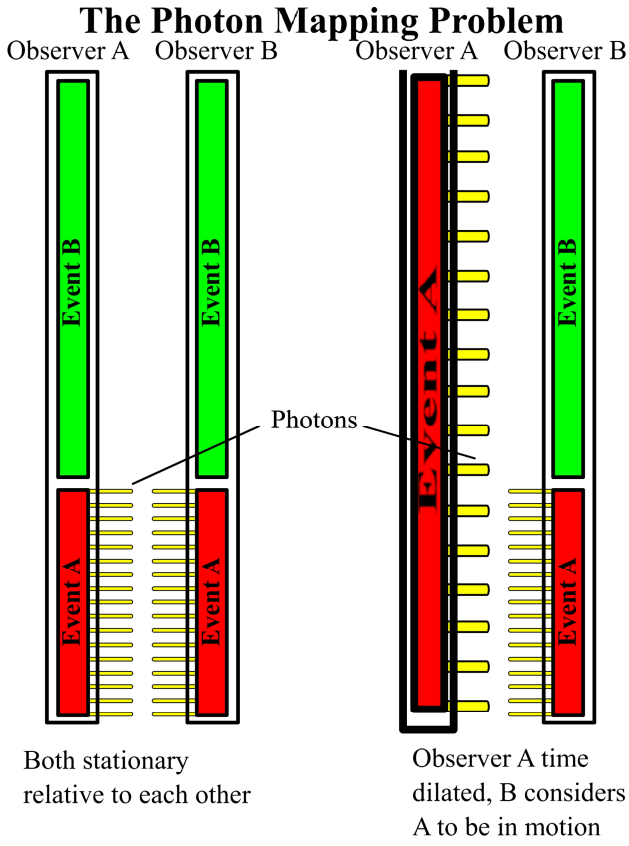
I say again, this cannot be a mere measurement problem, due to

the clocks being out of synch. This is not a "relativity of simultaneity" issue; it is not a clock synchronization problem. The photon striking the detector is an actual, physical event. Observer P cannot disagree with Observer O over the timing of an event in Observer O's own reference frame, or vice versa. There is an absolute fact of the matter as to when a specific photon strikes a detector in an observer's own frame.

Let's say observer O is holding up 1 finger at one point along his own timeline, while at a subsequent point he is holding up 2 fingers. Let's further say that a particular photon strikes the detector right next to observer O while he is holding up 1 finger. Observer P cannot then come along and say, "No, observer O, you are incorrect. The photon in question struck when you were holding up 2 fingers." Observer P ***cannot*** disagree with observer O's observation or calculation of the timing of an event within observer O's own reference frame.

Statement #5: When there is relative motion between a photon source and a detector, each photon emitted maps to exactly one detector strike at a specific point along the detector's own timeline, independent of any observer.

On the following page is a diagram illustrating the Photon Mapping Problem:



Explanation of the diagram:

There are two reference frames shown, those of Observer A and Observer B. Each frame consists of two identical events of unequal duration, Event A and Event B. A set, identical number of photons (yellow bars in diagram, or horizontal bars if diagram is in black and white in reader's edition of this book) are emitted from each event in both frames. Only photons from Event A are shown, and obviously, many, many more photons than depicted will be emitted.

In the situation on the left, there is no relative motion between the two frames, and the photons match up. In the situation on the right, Observer B considers A to be in motion and thus experiencing time dilation. Incidentally, the two frames are left side by side in the

diagram for clarity, since showing them in motion would make absolutely no difference to the conclusions that *must* be drawn. As you can see, in such a situation, Observer A's Event A takes up the whole of both Events A and B for Observer B, and thus the photons emitted from Observer A's Event A "map" all the way across both of B's events. That is, the photons from Observer A's Event A take all the way through both of B's Events A and B to strike the detector of Observer B.

If you mentally reverse the observer labels of the diagram, you will have the situation where Observer A considers Observer B to be in motion and experiencing time dilation. As you can see, in such a reversed situation, all the photons from Observer A's Event A then "map" to a narrow portion of Observer B's Event A, completely at odds with Observer B's view of things.

The situation is thus not symmetrical as required by relativity, and thus it is clear which one must truly be in motion, given that a reversal of the situation is not physically possible. Thus there can be no true relativity as demanded by the theory of relativity.

Objection: This so-called photon "problem" is just a variation of the "Twins Paradox." In order for the two observers to come together to compare notes after the experiment, one of them must undergo acceleration, experiencing forces that break the symmetry. Further, one of them must have accelerated so that there was relative motion between them in the first place.

Response: You're right! My "photon mapping problem" *is* a variation of the Twins Paradox, since, when the light bulbs are reunited, one will be found to have emitted less of its "store" of photons than has its twin, and so in that sense will be "younger" than its twin. So this is indeed a variation of the Twins Paradox.

But it's better, because it uses light, the very heart of relativity, rather than biological twins. And if you truly understand relativity

and think through the implications of this, you'll realize that I've just dealt another death blow to the relativity of simultaneity, shown the impossibility of reciprocal time dilation, and have also mortally wounded special relativity itself.

Let me continue throwing out some thoughts related to this. It *doesn't matter* whether or not the observers get together and compare notes or light bulbs afterward. It's not even required that they were ever stationary relative to one another, and then one accelerated away. To use the 1-finger-2-finger example given above, both observers can't claim one particular photon strikes the same detector at different points along one observer's timeline. Either the photon strikes while 1 finger is held up, or the photon strikes when 2 fingers are held up. It's not an either-or situation dependent upon whose viewpoint we're adopting. Both can *claim* the photon strikes at a different location along the timeline, but they can't both be *correct*. Unless there's some quantum mechanical, double-slit-experiment-type effect at work here. So no, this isn't an exact Twins-type paradox, where we *have* to resort to symmetry breaking to resolve the paradox. Both observers can deduce what the other would see and realize that every single photon "maps" to two different temporal locations along the same timeline, depending upon who is regarded as stationary. Since this is physically impossible under current knowledge, symmetrical time dilation is shown to be impossible.

Objection: You haven't made your case to my satisfaction. I still say this is strictly a variation of the Twins Paradox and can be resolved with symmetry-breaking acceleration. After all, one of those observers had to take his light bulb, get into his rocket, and accelerate away from Earth, so we can determine which observer is time dilated by examining the history of forces on both observers and their light bulbs, just as in the Twins Paradox.

Response: As I've said, of course it can be resolved with acceleration. But it doesn't *have* to be, because what I'm trying to

explain is that ***all time dilation is fundamentally asymmetrical*** to begin with. The symmetry is already broken *before* you resort to acceleration to solve any purportedly paradoxical symmetry, because it's physically impossible for there to be symmetry to begin with!

Pretend there's an alien species on a planet in a distant solar system that's in motion relative to us. They just happen to have developed a light bulb that is exactly similar to one on Earth, such that if the alien light bulb were to be placed next to the one on Earth, we could see that they were emitting photons of the same frequency and wavelength at exactly equal intervals. Somehow, both species recognize that the light bulbs are the same without doing such a side-by-side comparison. Now, unless you're able to dig back billions of years to examine the forces acting on both Earth and the alien planet to determine which one underwent acceleration relative to the other, then the photon mapping problem stands.

Incidentally, since you seem so fastened onto the Twins Paradox, suppose the twins are not reunited. The relative motion between them remains constant throughout their lives so that each views the other's time as passing more slowly relative to his own. Each views the other as aging more slowly relative to himself. Obviously if time is dilated, they can't both be aging more slowly than the other. So how do you resolve the paradox? Simply wait and see which one dies first, assuming they both would both die of natural causes at the same time were they to have remained in the same reference frame throughout their lives. The one that lives on will obviously be the one whose time was truly dilated. Paradox resolved.

"Not really," you will say. "The twin who lives on is obviously the one who accelerated away from the Earth in a rocket."

Okay. Try this, wise guy. Both twins are merely embryos that were placed in stasis at the exact same time immediately after their division into separate beings. They are both then placed on separate

rockets and launched away from Earth at the exact same speed, but in opposite directions. After that their rockets undergo a series of preprogrammed but random accelerations which are unknown to all observers, including the twins themselves, so that no one can determine the force histories of their respective rockets. Finally, both cease their maneuvers until there is uniform relative motion between them, at a significant fraction of light speed. The embryos are then taken out of stasis and brought to maturity by artificial means, in test tubes or something. They both then live out their natural lives on board the rocket. One of them dies first, and biologically, he is decades older than his twin.

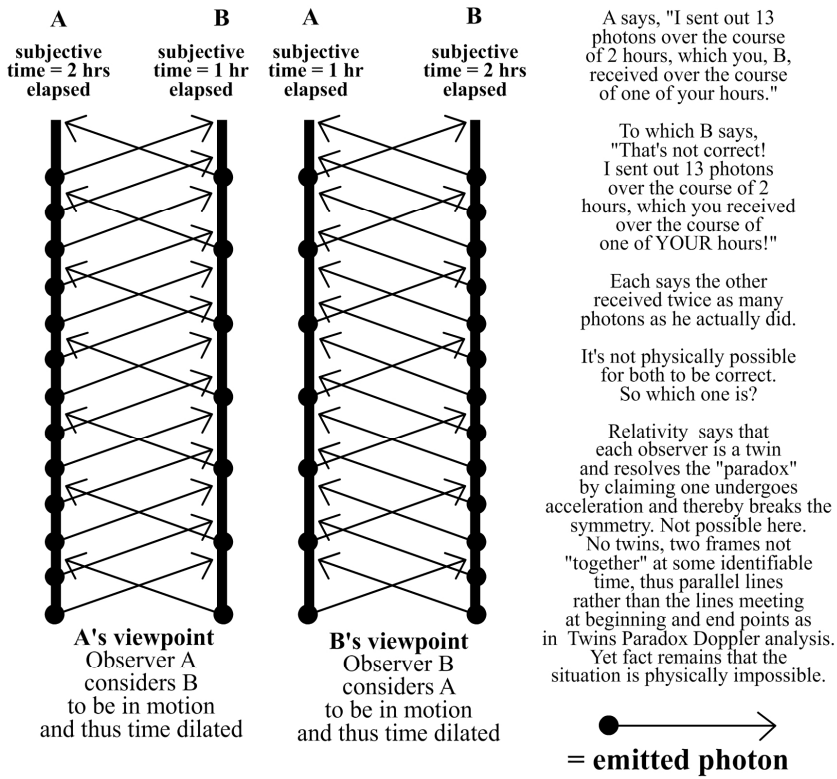
My point is, when you get right down to it, all motion in the universe, if the Big Bang theory is correct, can be traced back to a time when everything was stationary relative to everything else. All motion can be traced back to unity at the initial singularity. So if you're able to eliminate the Twins Paradox by determining which one is really in motion, then you're able to determine an absolute frame of rest, if you trace everything back far enough. So the resolution of the Twins Paradox, accepted by modern science, is actually the downfall of relativity, since it leads to an absolute reference frame at the beginning of the universe. Absolute space is deadly to relativity, and tracing back the history of forces and motion in the entire universe will reveal absolute space. It doesn't matter that we can't currently calculate such a history. The resolution of the Twins Paradox shows that it *can* be done.

Objection: Your photon mapping problem is just a reformulation of the "relativity of simultaneity."

Response: No, it isn't. It's an entirely different beast. The relativity of simultaneity deals with whether two separate events happened at the same time, or whether one happened before or after the other. My photon mapping problem deals with when exactly a single event happened along an observer's timeline. The same photon

cannot strike the same detector at two different points along an observer's timeline; i.e. the time of the same identical event cannot be shifted up or down its own timeline depending upon who is observing the event. In the relativity of simultaneity, you're talking about shifting the relationship of two separate timelines relative to one another. In my photon mapping problem, you're talking about shifting an event along its own timeline depending upon who is observing the event, which, for reasons I hope are obvious, should be physically impossible. You know, I didn't have breakfast on Monday morning if we're looking at it from my viewpoint, and on Tuesday night if we're looking at it from a viewpoint that is in motion relative to mine.

Here is another diagram to clarify things: (see next page)



Symmetrical Time Dilation and the Photon Mapping Problem -
No resolution other than abandoning symmetric time dilation!

Using the above diagram, let's say that each observer has a piece of paper with two columns. Each time he emits a photon, he makes a mark in one column, and each time he receives a photon, he makes a mark in the other column.

Using this method, then in the above diagram, from A's viewpoint, when he receives his first photon from B, he makes a mark indicating the reception, and notes that he has two marks in his first column, signifying that he has emitted two photons. A then calculates that when B receives A's next (third) photon, B will have 2 marks in his "emitted" column and two in his "received" column.

B sees things differently. When he receives A's third photon, he

actually has six marks in his "emitted" column and two in his "received column. Meanwhile, he calculates that when A received his first photon, A had one mark in the "emitted" column and zero in the "received" column.

The whole point is that we're not comparing whether A and B had certain marks on their respective papers at the same time or not. We're determining what marks each had upon his paper at the time he received a particular ***photon from the other observer. It's not a question of the simultaneity of two events. We're determining the state of an observer's environment at the time he receives a particular photon.*** If I'm having a hamburger, whether it's night or day in my environment when I'm eating the hamburger doesn't depend upon whether we're looking at it from my viewpoint or that of a distant observer. There is a matter of absolute fact as to whether it's morning or night when I'm eating the hamburger. It has nothing to do with the relativity of simultaneity.

Objection: Your thought experiment features two light bulbs that, if stationary relative to one another, would emit photons of the same wavelength and frequency at exactly the same time. Two such light bulbs don't exist. Your thought experiment is therefore invalid.

Response: Just because such light bulbs or light sources don't exist at present (maybe they do; I don't know) doesn't mean that the logic behind the experiment isn't sound, and that the conclusions drawn from it aren't correct. The notion of two lightning bolts randomly striking the front and back of a moving train at the exact same instant didn't stop Einstein from using such an unlikely event in his own thought experiments. My experiment stands, as do the implications of it.

Objection: Your photon mapping problem is merely a Doppler Effect. Since the Doppler Effect is undoubtedly symmetrical, your photon mapping problem is really no problem at all. You're simply

failing to take into account the symmetrical nature of the Doppler Effect. You're misunderstanding it. Your diagram, if you represented it with the relative motion taken into account, would be shown to be invalid. Your diagram is therefore misleading and incorrect.

Response: The Doppler Effect and relative motion itself are completely irrelevant to the photon mapping problem. It's the time dilation alone that matters. If there is time dilation, the photon mapping problem arises if one attempts to consider the situation symmetrically, as relativity tries to do. Thus, ***either there is asymmetric time dilation and absolutely no relativity, or there is relativity and absolutely no time dilation.*** Since symmetric time dilation is an inherent feature of relativity, then relativity is invalid. The inescapable conclusion of the photon mapping problem is that time dilation is incompatible with relativity, and the photon mapping problem itself is irrefutable.

Oddly enough, it's not like my Photon Mapping Problem is unknown to relativity. But it's always in the background of the Twins Paradox, and never considered on its own.

A version of the Photon Mapping Problem always comes up in detailed explanations of the Twins Paradox, at the point where the explainer is doing a Doppler Shift analysis to resolve the supposed paradox. But it's never referred to as a problem, and the focus always remains on the twins. This is like remarking upon the strange bowtie a serial killer is wearing even as he bears down upon you with a knife and an insane gleam in his eye. Scientists are aware of the photon imbalance where time dilation is involved, but they don't seem to have followed the implications of it to the logical conclusion; they seem to think that it's part and parcel of the Twins Paradox, and can be ignored since the Twins Paradox isn't really a paradox at all.

But the Photon Mapping Problem can't be ignored. It will not go away. Because **the true story in the Twins Paradox isn't the Twins**. It's the imbalance in the emission of photons. And it isn't

reciprocal. As I've shown, reciprocity leads to physical impossibilities in the form of one photon striking a detector at two different points along the detector's own timeline depending upon which observer we're looking at. And since the photon imbalance exists in EVERY case of time dilation, not just cases where there are biological twins or something similar involved, there is **always** a matter of fact as to which frame is actually time dilated.

The Twins Paradox applies only to situations where there are biological twins. But because the Photon Mapping Problem involves light, it is universal. Because the Twins Paradox can be resolved, so can the Photon Mapping Problem. In other words, there can never be a question as to which of two frames is experiencing time dilation. There can never be reciprocity, or symmetry, of time dilation, which is a requirement of special relativity. There can never be a question as to which frame is actually in motion, since a comparison of frames can reveal the frame of absolute rest, which relativity forbids.

Simply put: relativity in its current form is untenable. Time dilation, if it exists, is not reciprocal, which is required by relativity, and it kills relativity by revealing absolute rest.

How can absolute rest be revealed? Take two frames in relative motion, A and B. An analysis of the photons will determine which one is truly in motion. Say such an analysis reveals that A is the one at rest. You then compare A to a third frame, C. Photon analysis reveals that C is in motion. And so on and so forth, until you've established a standard and compared every frame in the universe.

It doesn't matter that such a comparison is a daunting task and would most likely be beyond mankind's ability for, oh, I don't know, forever maybe. The fact is that the way to do it is there. The lack of being able to perform an experiment to verify a hypothesis has never stopped science from accepting a seemingly sound hypothesis. Scientists do it all the time. They just shrug off the lack of experimental evidence and figure that one day the technology or the

ability to do the experiment will be there, and will confirm the hypothesis. Indeed, such an attitude is the very epitome of the Einstein's relativity in its infancy in the early years of the 20th Century.

The Photon Mapping Problem, or the imbalance in photons between frames in relative motion, is clearly an insurmountable problem for relativity in its present form. It's so clearly a problem that we don't even need to perform the type of frame comparison I've outlined. Scientists have already accepted that the Twins Paradox is really no paradox and has a resolution. **Such acceptance of the Twins Paradox requires an automatic acceptance that its more generalized variation, namely, my Photon Mapping Problem, can likewise be resolved, which means, "Death to Relativity!"**

I will say it again: The Twins Paradox actually leads to the downfall of relativity, because it reveals a more universal problem: the imbalance of photons emitted in time-dilated frames. The Twins aren't the real story of the Twins Paradox; the photons are. **Ignore the Twins! They are a red herring.** Photons are light (duh!) which is at the heart of relativity, so the Twins Paradox is actually a universal problem, inherent in EVERY case of time dilation.

DEATH TO GALILEO!

Let's consider a common illustration used to demonstrate Galilean relativity: a ball dropped from the top of a mast on a moving ship. From the viewpoint of someone on the ship, the ball falls down to the deck in a straight line parallel to the mast. But from the viewpoint of someone on the shore, the ball traces out a half-parabola as it falls to the deck. Both viewpoints are equally valid, says Galileo, since all bodies are in motion and there is no way to determine an absolute frame of rest. So in actual physical fact, the ball's motion depends on your viewpoint.

But I reject Galilean relativity on this basis: say we shone a light on the ball as it fell from the mast of the moving ship. The ball would then cast a shadow on the "wall of the universe" behind the ball. The ball's path, cast onto the wall as a shadow, would be a half-parabola, from either the viewpoint of someone on the ship or someone on the shore, regardless of whether or not the light source casting the shadow was moving. It is apparent from this that I consider the entire universe as like a closed room. All motion within this "room" can only be relative to the walls, floor and ceiling of this room. Now, we can isolate the motion of a ball dropped from the mast of a moving ship within this room, and pretend that the ball merely falls in a straight line parallel to the mast. But this isolated path is just that: pretend. The actual, true path would be that which the ball makes relative to the walls of this universal room. It makes no difference whether we can actually detect the "walls" of our universe; they can be virtual, or actual. They must exist; as long as there is obviously *something* of greater spatial extent than the reference frame from which we make

an observation, then the motion of that reference frame is relative to that greater something. Take, for example, the aforementioned ship. Obviously, the ship is in motion within a greater space. The ship is on a planet; the planet is in a solar system, the solar system is in a galaxy, the galaxy is in a…you get the idea. A man on a ship may pretend ignorance of the wider universe in determining motion on his ship, but why should his ignorance, or his pretension of it, extend to nature?

Now, you can say that you don't believe in my notion of a "universal room" to which all motion is relative. You can say that all that exists are relations between the positions of various objects, and so all motion is relative. All motion in such a case is then part of a "web" of relations. This is undeniable. All motion must then be relative to this "web." How, then, is this any different from my belief that all motion is relative to the walls of a universal room? We can isolate a particular path within this web, and the path will appear to have one configuration (as in the ball dropped from the mast of the moving ship). But to do so is once again to pretend ignorance. The true path can be determined by examining the path from multiple viewpoints within the web, much like a computer can construct a 3-dimensional image of the interior structure of a human head by analyzing numerous x-rays from multiple angles. So the claim that, "No absolute space exists, only relations between objects exist," can be shown to ultimately lead to what can only be considered an absolute frame of reference, namely, the totality of the web of relations. Slap walls around this totality, and you've got my universal room.

That's why I believe that Galilean relativity has no more substance than an optical illusion, and has no effect upon nature. Einstein's error is his belief that Maxwell's laws should not violate Galilean relativity. He's trying to keep them both. But why? If Galilean relativity is an illusion, then why should we care if

Maxwell's laws violate it? Maxwell's laws describe nature; Galilean relativity describes an illusion. Throw out Galilean relativity!

Galilean relativity *does* exist—but it's a figment of our consciousness. It has the same sort of existence as the apparent back and forth motion of an object when one alternately opens one eye and closes the other, in rapid succession—that is, it's an illusion. Einstein's relativity, by holding on to Galilean relativity and Maxwell, is in effect saying that the object actually *does* move, depending on whether I keep both eyes open constantly, or alternately close and open them in rapid succession. He is saying that my behavior actually alters the physical properties of the object, which is patently foolish.

Given my preference to repeat myself in an attempt to clarify my points, I offer the following as an axiom.

If there is relative motion between two objects, then there is definitely a fact of the matter as to which one is really in motion relative to the other, or both are definitely in motion relative to a third object, which itself may be either definitely stationary or definitely in motion relative to a fourth object, and so on, until we arrive at an absolute reference frame.

Let's say there's an object that is so large that its bounds are co-terminal with the bounds of the universe itself (and if the universe is infinite, then the object is infinitely large). Such an object, since it is the same size as the universe itself, will have no space in which to move. So the reference frame of the object would constitute an absolute reference frame for everything that moves within the object. This object's reference frame would also be identical with the universe's own reference frame. Thus, everything contained within the universe must ultimately refer its motion to this absolute frame.

Objection: You're assuming an absolute reference frame. It's

built into your examples.

Response: So what? In relativity, each observer is allowed to consider their own reference frame as absolute, in that they refer all motion to a frame in which they are regarded as stationary. For example, the observer in the rocket regards the walls of his rocket as his own absolute frame. The external observer regards his own frame as absolute. Granted, they don't call their own frame absolute, recognizing that it is just one among many possible frames, but they still refer all motion to their own chosen frame, in effect considering it as absolute. So relativity, rather than allowing a universal absolute frame, allows for each observer to carry his own absolute frame along with him. Relativity simply requires each observer to recognize that their frame is only absolute to themselves, and is not *really* absolute.

But my point is, the observer inside the rocket refers all motion to a reference frame attached to the hull of his rocket. Why does he not choose a reference frame attached to a chair within the rocket, or to the central light bulb, or to the light pulse itself? Why does he refer all motion within his rocket to the reference frame of the rocket? It's because everything within the rocket is contained by the rocket! It's natural to consider things from the reference frame of the rocket, because that reference frame contains all things within the rocket, even though everything within the rocket has its own reference frame! Why does the observer not use a reference frame attached to his own person, so that everything within the rocket moves relative to himself?

The answer is obvious. The observer in the rocket is naturally referring all motion to the largest reference frame available to him: the hull of the rocket itself. But obviously, that is *not* the largest reference frame available to him. If he bothers to look out his rocket's windows, he will see that there is a world exterior to him. Why does he not continue following his natural tendency, and attach his reference frame to something in the wider world? Because obviously

there is a larger reference frame that must encompass his rocket. He is obviously contained within a greater space, and since, as evidenced by his choosing of the rocket's hull as a reference frame rather than the objects within the rocket, he obviously believes that contained objects (including himself) must automatically surrender their reference frame to the container, why does he not remove his chosen frame from the rocket's hull and instead attach it to whatever he can determine must be the largest reference frame available? For he can surely look out his windows and imagine that of all the objects he can see, and of all the things he imagines must exist that he can't see, containing walls could be built around this immense cluster of objects, and he should naturally attach his reference frame to those walls, even if those containing walls can only exist in his mind, due to his inability to construct them physically.

And that is what I'm talking about. We can take the sum total of all objects that exist, and we can build a container around them, even if that container is only in our minds. And then, following the logic of Galileo, whose sailor attaches his reference frame to the hull of his sailing ship, and the logic of Einstein, whose train observer attaches his reference frame to the train car, we should attach our reference frame to the walls of our enormous container. Every single observer within this immense cluster of objects should attach his reference frame to the walls of our enormous container.

And don't tell me it can't be done. We can already do it. Hubble and other telescopes have already made maps of the visible universe. In considering these maps, we are *already* considering the visible universe as a whole. We are thus *containing* the visible universe. We already have a container around our universe. Why are we not fixing a reference frame to this container and referring all motion to it?

If our rocket had multiple observers within it, they would not all use their own individual reference frames. They would all attach their reference frames to the hull of the rocket. Surely even Einstein's

followers can admit as much. If they don't, then they're being disingenuous. Even if all the observers are walking at a uniform velocity in random directions within the rocket, they are not going to consider things from the viewpoint of reference frames attached to themselves, and consider themselves to be stationary while the rocket and its other moving contents are in motion. The observers will all still say that they are in motion relative to the rocket.

Objection: Hello, stupid! The reason we can't do it is because all observers regardless of their motion measure the same speed of light. That's been experimentally proven. If everyone in the universe attached their reference frames to some "universal container," then observers should measure differing speeds of light depending upon their motion. It's been shown that c is constant in all frames, which it wouldn't be if we all chose a common reference frame.

Response: Ah. And so now we bring up the Michelson-Morley experiments, and interferometer experiments in general. Good. I'll respond to this in the next chapter.

Meanwhile, indulge me while I flog Galileo a bit more, possibly repeating myself.

Here's a nice thought experiment that points out the ridiculousness of relativity.

Let's take Einstein's example of the train moving along the embankment, and the lightning strikes. Let's then take it one step further. Within this train, there is a miniature train traveling on its own track. You know, a toy train like you can buy in a toy store, set up within the larger train, on its own track and with its own little mountains and miniature villages, etc.

At a point when the toy train happens to be trundling toward the front of the larger, human-scale train, a passenger on the larger train stabs two stakes into the toy ground, one to the front of the toy train's path and one to the rear, and he does so such that both stakes enter

the ground simultaneously from his own viewpoint.

Now, following Einstein, a little toy passenger inside the toy train will see the light from the forward stake first, since he is moving toward the forward stake. (Obviously, since the stake is reflecting light, which is how we are able to see it. The stakes are thus exactly equivalent to a lightning strike). The toy passenger will thus conclude that the first stake was jammed into the ground first, and the rear stake second. The toy passenger, when later asked by the human-scale passenger, will tell the human-scale passenger that he jammed the stakes into the ground non-simultaneously.

Are we to allow this absurdity? Where do we draw the line? Suppose each toy train has a moving toy train inside it, so that we have a regress of nested toy trains all the way down to atomic scale, like a Chinese puzzle box? Would it not be correct and better to say firmly that the largest train is the true reference frame, and we must refer all measurements within the smaller trains to the largest train, rather than pretending that each toy train is its own reference frame, completely independent of all other trains, both larger and smaller?

But even this is not sufficient, for we already stated that the largest train was itself moving along an embankment. To find the true "largest train," we must therefore enlarge our scale to include the bounds of the entire universe. The "walls" of the "largest train" would therefore be the bounds of the entire universe, and that is the "train" to which we would reference all motion.

My point is that it seems absurd to allow each toy train to have its own independent reference frame. Since there is obviously a larger space in which the toy trains can move, why should Nature attach an independent reference frame to that train? But Nature doesn't attach reference frames; that is a human quirk. Unless the train is entirely self-contained and there is no external space in which it can move, then why should humans attach an independent reference frame to every single thing that can move? If a thing can *move*, then it is *de*

facto part of a larger reference frame, a reference frame that cancels out the train's "independent" frame. If object A and B are both capable of independent motion, and they are each capable of circumnavigating the other, then they share the same space, and hence both are *de facto* within the interior of a larger object, C. The actual state of their motion is irrelevant to the consideration of a reference frame; the very fact that each is capable of moving in the same space as the other, and that each is capable of identical freedom of movement, automatically means their motion must be referenced to the larger object, even if the full extent of that larger object cannot be readily detected.

And I'm not saying that each individual reference frame must be extended from the object to encompass the entirety of the space in which the object is embedded, so that each object has its own independent reference frame that encompasses the entire universe, leaving us with X number of objects each with its own enormous, independent reference frame. What I'm saying is that we must work inward. We take the bounds of the largest reference frame and extend it inward, so that it encompasses the smaller objects contained within it. In my train example above, we would extend an imaginary coordinate grid from the walls of the train itself, such that the interior of the train is marked off by this grid. Thus, each toy train and its nested counterparts would share this larger grid. The grid attached to the human-scale train would thus be the only valid grid, and all other smaller grids would be mere convenience for the toy passengers.

But as I've said, even the human-scale train is moving, or at rest, whichever is the case, within a larger space.

From all the above, there *must* be an absolute reference frame, extending inward from the bounds of the universe, to which anything within the universe must reference its motion. It doesn't matter that we can't determine what this absolute reference frame is, any more than it matters whether the man in the human-scale train is able to

see out a window or open a door to determine whether he's actually enclosed within a train. The absolute reference frame is *there*, regardless.

IF NOT RELATIVITY, THEN WHAT?

Scientists have a pat answer when people point out the shortcomings of widely accepted theories: "It may not be perfect, but it's the best we've got right now."

So if we throw out relativity, what are we left with? I don't have an answer to that. But just because something is "the best we've got" is no reason to hang on to it. People who would make such a remark should also have no problem with the sentiment, "I don't love my spouse, but he/she's the best I've got right now. I'll hang on to him/her until someone better comes along."

Scientists expect you to offer a replacement before they'll let go of their favored theories. You don't pull the pacifier out of the baby's mouth unless you've got something else for it to suck on.

Well, I'm not going to offer an alternative theory here, but I'm going to point out a possible direction where brave thinkers might seek out an alternative theory. It's the one direction in which no self-respecting, career-minded scientist has thought to even glance in several hundred years. This is probably where I'm going to destroy any credibility I might have built up, and lose 99% of the readers who have stuck with me thus far, because it's a seemingly insane step that most people will refuse to take. Even my crackpot mind rebels at this wild idea, but I'm more than willing to look and give the idea the full and intense scrutiny which it deserves. Because if relativity *is* false, then this idea is the first and foremost alternative worldview that *must* be explored to find an alternative theory. Which is also the reason why most modern scientists will let

themselves be dragged kicking and screaming into the grave along with relativity rather than give up their precious theory.

Here it is:

THE UNWARRANTED DEMISE AND NECESSARY REBIRTH OF AN EARTH-CENTERED UNIVERSE

Or

DEATH TO COPERNICUS!

Hey! Where'd everybody go?

Oh, well. I'm going to plunge ahead anyway, because I *love* to play with myself. Or by myself. Yeah, that's what I meant.

Copernicus

Up until the 16th century A.D., pretty much everyone believed that Earth was at the center of the universe, and that the Sun and the stars and everything else revolved around the Earth. This is known as geocentrism, meaning "Earth-centered."

Then in the 16th century, a genius named Nicolaus Copernicus had the visionary idea that there was nothing special about the Earth. Earth orbited the sun, just like all the other planets in the solar system. This is known as "heliocentrism," meaning "Sun-centered."

Of course, the Catholic Church didn't like Copernicus's idea, and so he kept quiet about it.

Galileo

In the 17th century, another genius named Galileo Galilei, an astronomer, made several discoveries that were taken as proof that

Copernicus was right. Galileo discovered moons orbiting Jupiter, which proved that not everything orbits the Earth. He also observed the phases of Venus. The phases didn't work if Venus orbited the Earth.

Galileo dealt these two "blows" to geocentrism, turning the tide in favor of heliocentrism and sparking the scientific revolution. After Galileo, pretty much everyone believed that Earth was not at the center of the universe. After Galileo, pretty much everyone believed that there was nothing really special about Earth's place in the universe.

James Clerk Maxwell

A few hundred years later, in the middle of the 19th century, another genius named James Clerk Maxwell formulated an electromagnetic theory which showed that light, electricity and magnetism were all manifestations of the same electromagnetic field. The equations of his theory predicted the constant speed of light.

Albert Michelson and Edward Morley

Shortly after Maxwell, two more geniuses named Albert Michelson and Edward Morley conducted one of the most famous scientific experiments in history: the Michelson-Morley experiment.

At that time, most scientists believed that light waves traveled through a medium that filled all of space, called the *luminiferous aether*. Much the way sound waves require a medium such as air to propagate, so it was believed that light required a similar medium.

The Michelson-Morley experiment was intended to detect the motion of Earth relative to the luminiferous aether. The reasoning behind the experiment was simple. If, as Maxwell said, light travels at a constant speed through the electromagnetic medium, then if

you're moving relative to the medium, you should be able to detect a change in the speed of light, specifically, the velocity of light you measure should be the speed of light minus your own velocity.

The technical details of the experiment aren't important. What is important is that the experiment *failed to detect any motion of the Earth relative to the luminiferous aether*.

This was a great puzzle to the scientists of the time, since, as everyone had known since the time of Galileo, the Earth was moving through space as it orbited the sun. Either they were wrong about the Earth moving through space, or there was something peculiar going on that desperately needed to be explained.

The scientists of the day opted for the latter possibility, since the notion of an immobile Earth was completely ludicrous to them, so ludicrous that it wasn't even considered as a possibility, even though it was the most obvious explanation for the results of the Michelson-Morley experiment. These scientists put forth a lot of theories as to why the Earth's motion couldn't be detected, but none of these theories was entirely satisfactory to all concerned.

Albert Einstein

At the beginning of the 20th century, yet another genius named Albert Einstein was troubled by an aspect of Maxwell's electrodynamic theory. In Maxwell's theory, the electrodynamic forces between a magnet and a conductor are different depending on whether the conductor is in motion or the magnet is in motion.

What this indicated is that there is a preferred frame of reference. Einstein did not like this. He thought that it should make no difference whether the magnet or the conductor was in motion. Only the relative motion should matter.

Einstein overcame the moving magnet and conductor problem by developing his Special Theory of Relativity. Maxwell's theory seemed to indicate a preferred reference frame, which Einstein

didn't like, so he developed a theory that got rid of Maxwell's frame-dependence while maintaining Maxwell's constancy of the speed of light.

At the same time, Einstein's theory also explained the failure of the Michelson-Morley experiment to detect the Earth's motion relative to the aether. There *is* no aether, Einstein said. All observers measure the same speed of light no matter how fast they're going, because time slows down the faster we move, and furthermore, objects shrink in the direction of travel.

Summary from an Earth-centered viewpoint

So it's all neatly explained. The Earth is not at the center of the universe. The Earth orbits the sun, just like an uncountable number of other planets orbit their own suns throughout the universe. Earth just an unremarkable little speck in a vast universe. This has all been proven beyond a shadow of a doubt.

Think again.

Galileo's discovery of moons orbiting Jupiter does not prove that the Earth orbits the sun. All his discovery proved was that not everything orbits the Earth. He did not prove that the universe does not revolve around the Earth.

Also, his observations of the phases of Venus only proved that the current (16th century) geocentric theory needed to be slightly modified so that Venus orbits the sun rather than the Earth.

Contrary to popular belief, Galileo did not disprove geocentrism.

In other words, heliocentrism became the dominant theory even though all the evidence available at the time (Galileo's two discoveries) supported *either* theory, favoring neither. Heliocentrism claimed victory over geocentrism based upon absolutely no persuasive, conclusive evidence.

Two hundred years later, Maxwell offered a mathematical theory that claimed a preferred reference frame, the luminiferous aether.

But the evidence was only mathematical. The physical results were the same regardless of whether the conductor or the magnet was in motion.

Decisive evidence in favor of geocentrism didn't come until two hundred years after Galileo, with the Michelson-Morley experiment. This experiment lent unequivocal support in favor of geocentrism over heliocentrism. But to the scientists of the 19th century, heliocentrism, despite having no proof favoring it over its rival theory, was too entrenched. Evidence that favored a motionless Earth was staring them right in the face, but they rejected it out of hand, because the notion of an immobile Earth was too ludicrous to even consider. Without even the barest thought of reconsidering geocentrism, scientists sought an alternate explanation.

It took about twenty years, but Einstein finally came to the rescue.

Absolutely no proof of relativity

But did Einstein really rescue anything?

Despite claims to the contrary, relativity has never been proven. It has been supported by evidence. But—and this is a crucial *but*—just because evidence supports a theory does not mean the theory has been proven. Other explanations for relativity's supporting evidence have not been ruled out. In other words, the same evidence can support other theories besides relativity. That is why relativity is only a *theory* and not a law of nature.

In fact, the two dominant theories in physics—relativity and quantum mechanics—conflict with each other. That's why you hear talk of the Holy Grail of science: The Grand Unified Theory. It means scientists know relativity is incomplete, possibly even incorrect, and so they're looking for the final theory that will eliminate the conflict and allow relativity to be reconciled with quantum mechanics.

Relativity is the dominant scientific theory of its type because it has the support of most of the world's scientists. It is not the dominant theory because all the evidence precludes any explanation other than relativity.

If relativity has not been proven, then the evidence of the Michelson-Morley experiment is still open to interpretation. If relativity, which was essentially born to explain evidence of an immobile Earth and an absolute frame of reference, is not proven and is possibly incorrect, then the evidence in favor of an immobile Earth and an absolute frame of reference has yet to be refuted.

Other purported disproofs of geocentrism

Complexity

"The mechanics of an Earth-centered universe are too complex. The mechanics of a non-Earth-centered universe are much simpler, and therefore geocentrism must be wrong."

This is just ridiculous logic. Scientists don't accept this sort of logic when religious folk offer the complexity argument as proof of God (life is too complex, therefore there must be a God), so why do they allow it to be used as a disproof of geocentricity (the mechanics of an Earth-centered universe are too complex, therefore the universe must be non-Earth-centered)?

If the entire universe were rotating around the Earth, that means the stars would be moving much faster than light, which is impossible

This claim is based on Einstein's postulate that nothing can move faster than light. Again, relativity has not been proven, so you can't appeal to it in this argument. I'm not appealing to it, since I don't believe in relativity. Don't appeal to an unproven theory in

which I don't believe in order to argue with me against geocentricity. Geocentricity and relativity are incompatible.

In any case, there are several problems with the above objection. For one, if the stars *are* rotating around the Earth, and we allow that they're doing so faster than light, then we must ask what they're moving faster than light relative to. Absolute space? They're certainly not rotating faster than light relative to one another. They're only rotating faster than light relative to the Earth. In which case, if you choose to say that the Earth is rotating rather than the entire universe, it's equally fair to make the claim that the Earth is rotating faster than light. How so? If we take a point on the Earth and extend it thousands of light years out into the universe, such that it rotates along with the Earth, then at some distance this point will be rotating faster than light relative to the universe as a whole. In effect, when there is relative greater-than-light-speed motion between the Earth and the universe as a whole, then a reference frame attached to the Earth and thus stationary relative to Earth, will, at some distant point, be rotating faster than light relative to the rest of the universe. So it doesn't disprove geocentrism to say that in a geocentric universe, the stars are rotating faster than light, since something is apparently moving faster than light in either a geocentric or a non-geocentric view.

But back to my original response to the above objection: don't you see? A relativist cannot use relativity to try to invalidate the geocentric frame, because if they claim they *can* invalidate the geocentric frame using relativity, then they have just invalidated relativity itself, because one of the main assertions of relativity is that all reference frames are equal. If the geocentric frame is not valid or equal, relativity is thereby claiming the existence of preferred reference frames, which is inherently forbidden by relativity.

The main cry of the relativist against Geocentricity (capital G—an absolute frame as opposed to merely an Earth-centered frame) is

usually that an Earth-centered universe is a rotating, and therefore non-inertial, reference frame, and thus is not covered by Relativity. This is, of course, not true. While it is true that non-inertial frames are not covered by *special* relativity, they are covered by g*eneral* relativity. And anyway, in an Earth-centered universe, Earth is *not* in an accelerating frame. The *rest* of the universe is. So there's absolutely no way to reject the Geocentric frame by appealing to its alleged non-inertial nature.

And again, if you *could* invalidate the Geocentric frame using relativity, then you have actually disproved one of the cornerstones relativity, namely that no reference frame can be experimentally shown to be preferred above any other.

But again, I do not believe in the validity of relativity, and if you do, we could argue about it all day and not get anywhere, because even if you're the world's most renowned physicist, or you're Albert Einstein himself, there's nothing you could say to make me believe in relativity, there's no amount of evidence you could cite me to make me believe.

That being said, below are some of the common objections used in attempts to invalidate a geocentric frame. Note that one of the common themes throughout is that the evidence mustered is always applied by its proponents more widely than is warranted.

The phases of Venus

Again, the phases of Venus don't disprove an Earth-centered universe. They simply prove that Venus doesn't revolve around the Earth, which it did in the standard geocentric model of Galileo's day. If you allow that Venus is orbiting the sun rather than Earth, then the phases of Venus appear in the geocentric model. If you're going to try to disprove Geocentrism, don't use geocentric models that even geocentrists have discounted. We're not in the Middle Ages any more, so stop trying to pretend that geocentrism is. We've come a

long way, baby.

The moons of Jupiter

Like the phases of Venus, the moons of Jupiter don't disprove an Earth-centered universe. They simply prove that not everything revolves around the Earth.

Foucault's Pendulum

Hang a pendulum so that's it's free to swing in any vertical plane, and the plane of swing appears to rotate relative to the Earth. This has long been taken to prove that the Earth is rotating.

Actually, all it proves is that there is relative rotation between the Earth and the fixed stars. It can either be said that the Earth is rotating beneath the free-swinging pendulum, or that the free-swinging pendulum picks up the motion of the fixed stars, which are rotating around the Earth.

Besides, there are geocentric models in which the Earth rotates on its axis, he repeated for the umpteenth time.

Foucault's pendulum, long touted as a disproof of geocentrism, actually supports *either* an Earth-centered or a non-Earth-centered viewpoint, and so is neither a proof nor a disproof of either theory. If the same evidence supports two mutually exclusive theories, then such evidence is said to be inconclusive. And that's exactly what Foucault's pendulum is.

Not everything revolves around the Earth

This doesn't disprove an Earth-centered universe. Just because parts of our solar system or parts of other solar systems don't revolve around the Earth doesn't mean that the universe as a whole doesn't revolve around the Earth. Geocentrists allow that locally,

objects can orbit other objects besides the Earth, but that the universe as a whole revolves around the Earth. Step ye forth from the Dark Ages, o misguided anti-geocentrist.

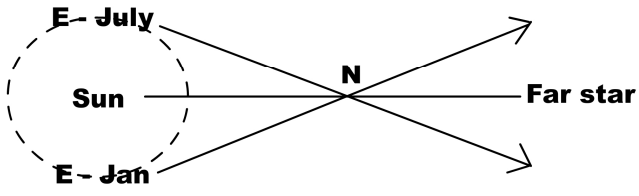
Stellar Parallax

If you hold your index finger in front of your nose, close your right and eye look at your finger through your left eye, then close your left eye and look at your finger through your right, your finger will appear to shift positions against the background depending on which eye you look from. This is parallax.

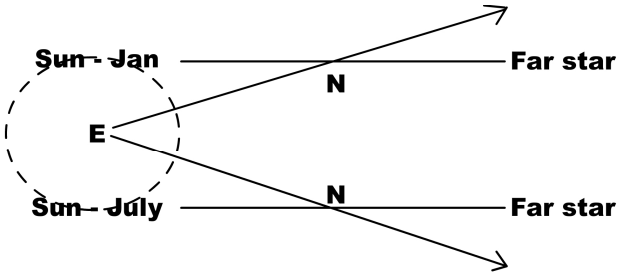
In stellar parallax, if you look at a nearby star and note its position relative to a more distant star, then wait six months until the Earth is at the opposite of its supposed orbit around the sun, then the nearby star will appear to have shifted position relative to the more distant star. This is offered as proof that Earth orbits the sun.

Yet, like everything else offered against an Earth-centered universe, parallax is no disproof of geocentrism at all, since the same stellar parallax also appears in the geocentric model.

See the diagram on the next page.



Heliocentric parallax



Geocentric parallax

Weather

"The circulation of the atmosphere, the jet streams, and weather in general, are the caused by the rotation of the Earth."

Actually, weather is caused by differences in atmospheric pressure, which is due to the uneven heating of the Earth by the sun. Which doesn't speak to whether the Earth is rotating, or the universe. Next objection, please.

The Earth bulges at the equator due to the Earth's rotation

Is it the Earth's rotation that causes the bulging, or is it the universe rotating around the Earth that causes the bulging? Inquiring minds want to know.

Anyway, there are versions of Geocentrism where the Earth rotates, so there's no help there.

Earthquakes can actually affect the Earth's orbit and rotation

Allegedly. But this argument assumes that a Geocentric Earth is absolutely immovable and can't change its orientation in space. Who is making such a claim? Just because something is motionless at the center of the universe, who says that it can't be moved even the slightest iota by an earthquake? And anyway, there are Geocentric models in which the Earth rotates on its axis, even though it doesn't move linearly through space. So earthquakes do not disprove geocentrism.

Experiments in particle accelerators confirm time dilation, and thus, relativity

Actually, particle accelerator experiments seem to confirm that particles moving at high speeds **relative to the Earth** live longer

than their slower-moving counterparts. Assuming that time dilation is the appropriate interpretation of the data.

They took atomic clocks on airplanes in the '70's, and that proved time dilation

Actually, the Hafele-Keating experiment seemed to confirm that atomic clocks moving relative to the Earth ticked slower than their Earth-bound counterparts. Assuming that time dilation is the appropriate interpretation of the data.

Cosmic ray muons in the atmosphere—

Yeah, yeah. Actually, the long-lived muons confirm that muons moving at high speed relative to the Earth live longer than their Earth-bound counterparts. Assuming that time dilation is the appropriate interpretation of the data. I've got a lot more to say on the muons later in this book, so stay tuned. The muons are actually another fatal problem for relativity.

The GPS system—

Blah, blah, blah. Things moving relative to the Earth apparently display characteristics of time dilation. So a physical theory with its roots in Geocentrism may have an element of time dilation. Completely unrelated to Einstein's relativity. Time dilation in no way invalidates an Earth-centered universe. I've been showing that *relativistic, symmetric* time dilation is invalid, not that some other sort of time dilation is invalid.

The Apollo moon landing and space probes

"We couldn't have gone to the moon or sent probes to other

planets if the Earth were at the center of the universe."

Really? Rockets are essentially just big bullets. You just aim and shoot. Putting the Earth at the center of the universe doesn't mean you couldn't hit the moon if you shot at it. A person at a firing range can hit a target regardless of whether they or the target is moving, assuming they're a good shot. Sure, NASA has to aim very carefully to hit their stellar targets, but they could still hit those targets regardless of whether they use Earth-centered or non-Earth-centered equations to calculate trajectories. One set of equations may be simpler than the other, and thus more convenient, but it's still just geometry. Saying that landing on the moon proves that the Earth orbits the sun (and not vice versa) is like saying that building a building using the metric system proves that buildings can't be built using the English system of measurement.

Why should the Earth be in a special place?

Why shouldn't it be? Why is something *here* rather than *there*?

Also, the question itself presupposes that there is something special about the center of the universe. There *may* be, but why does there *have* to be? It may be a place unlike any other in the universe simply because there can only be one center, but why assume that there's something special about the center simply because it's the center? When you get right down to it, isn't the center of *anything* just another place? Ding Dongs have cream filling in the center, making them special, (as do some lollipops), but why does the universe's center have to be "cream-filled?"

If you insist upon an answer, perhaps the center of the universe, for some reason currently unknown to us, is the only place where life can arise. It's widely accepted even by most scientists that stars have a "Goldilocks zone" where life is most likely to arise. Earth is in such a "Goldilocks zone." Perhaps the center of the universe is just such a "Goldilocks zone," in which case it's not such a mystery why

we're at the center rather than elsewhere. Maybe the center of the universe is where life is most likely to arise.

Or maybe it's just because God put us at the center of the universe. That's what you're waiting on me to say, isn't it? That's the answer that scares you the most, if you're a scientist. That's what you're waiting on me to say, so you can have your "Gotcha!" moment, isn't it?

But the truth is, **an act of God isn't necessary to explain our presence at the center of the universe**, so we don't even need to "go there."

Textbooks teach that the Earth orbits the sun, so it must be true

I have a long-winded response to this one, so here it is, beginning with quotes from Stephen Hawking and Phil Plait, two well-respected scientists.

> *"So which is real, the Ptolemaic or the Copernican system? Although it is not uncommon for people to say that Copernicus proved Ptolemy wrong, that is not true. As in the case of our normal view versus that of the goldfish, one can use either picture as a model of the universe, for our observations of the heavens can be explained by assuming either the earth or the sun to be at rest. Despite its role in philosophical debates over the nature of our universe, the real advantage of the Copernican system is simply that the equations of motion are much simpler in the frame of reference in which the sun is at rest."* — Stephen Hawking, The Grand Design, pages 41-42.

> *"I have two things to say that might surprise you: first, geocentrism is a valid frame of reference, and second, heliocentrism is not any more or less correct."* — Phil Plait,

The Bad Astronomer,
http://blogs.discovermagazine.com/badastronomy/2010/09/14/geocentrism-seriously/

Note on the second quote: Mr. Plait is referring to geocentrism with a "little g," not Geocentrism with a "big G." The whole lesson from his article is that the geocentric frame is just as valid (geocentrism with a little g) as the heliocentric frame, as long as you don't claim it's the absolute frame (meaning Geocentrism, with a big G), as in the following quote from the same article:

> *"That's where Geocentrism trips up. Note the upper case **G** there; I use that to distinguish it from little-**g** geocentrism, which is just another frame of reference among many. Capital-**G** Geocentrism is the belief that geocentrism is the* only *frame, the real one."*

Clearly, most modern scientists discretely acknowledge that the geocentric frame is just as valid as the heliocentric one. The only objection that can be made against the geocentric frame is that it cannot, according to relativity, be chosen as THE frame, the absolute frame. The honest scientist must proclaim that he is neither a geocentrist nor a heliocentrist. He can be either. There is no one correct frame; rather, there is a multitude of equally correct reference frames, and we can choose among them, so long as we don't claim that any particular one is absolute. This MUST be the modern scientist's perspective on the subject of geocentric versus heliocentric.

Why, then, does every science textbook present the heliocentric view as if it were the "correct" frame? (in the spirit of Mr. Phil Plait, let's call this view Heliocentrism, with a big H). And please, let's not quibble that the textbooks don't present a sun-centered frame, but rather one where the planets orbit the sun, which orbits the center

of the galaxy, which orbits the center of the local cluster, etc. The fact is that schools teach the model where the planets orbit the sun as if it were THE one true reference frame. Why? Why is the heliocentric model the one presented to school children? If the geocentric frame is just as valid as the heliocentric, why not present the geocentric model in textbooks, rather than the heliocentric?

Could it be that scientists don't want children "getting it into their heads" that the geocentric perspective is just as valid as the heliocentric, and that in fact, despite claims to the contrary, it has never been proven that the Copernican (heliocentric) model is correct and the Ptolemaic (geocentric) model wrong?

The fact, undeniable by anyone who believes in relativity, is that there is no way to prove that either model is correct, and that whether the sun goes around the Earth or the Earth around the sun is merely a matter of perspective, with nothing more involved than a shift in coordinates.

Why, again why, is the model where the planets orbit the sun presented as the "correct" view in modern textbooks, when, according to Stephen Hawking and any honest scientist, there IS no "correct" view?

How do you think these honest scientists would react if someone were to insist upon swapping the heliocentric model in the textbooks with the geocentric? Let's swap the models, and even allow the disclaimer that the model presented is merely one among countless alternatives, all equally correct? (Do most modern textbooks present such a disclaimer alongside the heliocentric model taught in the textbook? I don't know, but I doubt it).

How do you think people would react if such a demand were made?

"Crackpot!"

But there is nothing at all crackpot about the idea of swapping out the models. If, as scientists MUST admit, and have admitted very quietly, both models are valid, then they should have no

problem teaching one model over the other.

Teachers might object on the grounds that teaching the geocentric model would open up a can of worms they don't want to have to get into. If they're just trying to teach a basic model of the solar system, they don't want to have to get into a discussion of relativity to explain why the model being presented is just one of many equally correct models.

But if the above objection is raised, then you would have the same problem regardless of the model being taught. So, then: is the disclaimer that the model used is merely a matter of perspective not being added to the textbooks or lectures? If not, then, in effect, students are being taught that it's a matter of fact that the heliocentric model is the one true, "correct" reference frame. Which would explain idiotic comments like, "If the Earth didn't orbit the sun, we would never have been able to go to the Moon." And yes, I have heard this precise comment numerous times, as if the fact that we went to the Moon disproves the geocentric model.

The only possible reason scientists might not want the geocentric model presented in textbooks, rather than the heliocentric, is that they don't want people to realize that it is, in fact, just as valid to say that the sun orbits the Earth as that the Earth orbits the sun. They don't want such a model presented, because it's a slippery slope that leads to claiming that the geocentric frame is the absolute frame. And God, yes God, forbid, we don't want the public sliding down that slope, back into the Dark Ages.

And one more note: the textbooks I've encountered do teach that the Copernican model won out over the Ptolemaic model. And this is absolutely correct. But just because one model "won out" over another doesn't mean that one model was proven correct and the other incorrect.

So how about it? Since Hawking, Plait, and all honest scientists acknowledge that the geocentric (with a little g) is just as valid as the

heliocentric, then in all textbooks, let's present the geocentric view in all discussions of the solar system. How could any scientist object to such a thing? After all, it's all just a matter of perspective.

The Big Bang and geocentrism

Supporters of the Big Bang offer the analogy of an inflating balloon to explain the fact that, no matter in which direction we look, the stars seem to be receding from Earth. While these observations seem to support the Earth being at the center of the universe, they say no, no! Just picture Earth as a dot on the surface of an inflating balloon. Any dot on the surface of this inflating balloon will see all other dots receding from it. That's why it looks like we're at the center, but we're not really.

I find it interesting that Big Bang supporters *insist that their analogy be confined to the surface of the balloon*. If you lived on the surface of a balloon, then yes, no matter where on the surface you lived, you would see all dots receding from you as if you were at the center of it all.

Unfortunately, we don't live on a two-dimensional surface. We live in a three-dimensional universe. If we refuse to allow our analogy to be confined to the surface of the balloon, then the only other place in which all dots will appear to be receding from your dot is when your dot is at the center of the balloon.

Thus, the astronomical observations of Edwin Hubble, which led to the development of the Big Bang theory, actually support an Earth-centered universe. To make these observations support a non-Earth-centered universe, you must add a philosophical argument, known as the Copernican Principal, which says, basically, that there is nothing special about Earth's position in the universe.

So, in short, Big Bang observations taken at face value support an Earth-centered universe. They support a non-Earth-centered universe *only* if you add a philosophical condition that sort of begs

the question. In other words, to get a non-Earth-centered universe out of Big Bang observations, you have to sort of manhandle the observations to get them to say what you want, whereas with an Earth-centered universe, no manhandling of the observations is needed.

The Big Bang and Michelson-Morley

We have two sets of data that unequivocally support an Earth-centered universe:

Michelson-Morley, which supports the view that Earth is not moving; and astronomical observations which support the interpretation that Earth occupies a special place in the universe. We have two pieces of hard scientific evidence leading to a conclusion that, oddly, is being ignored and indeed scorned by the very scientists who collected the evidence.

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Let me stress this point: Einstein claims that the speed of light is constant for all observers in all reference frames. But this hasn't been proven. *Einstein is generalizing more than is warranted based upon the current evidence.* **All that has been experimentally proven to date is that the speed of light is constant for observers using Earth as their reference frame.** Think about that. That is my response to the objection raised at the end of the previous chapter.

Relativity is thus a premature theory! Geocentrism must first be ruled out before relativity can be accepted, not vice versa. Relativity must not first be ruled out before Geocentrism can be accepted. This is because Einstein is generalizing from a geocentric frame to multiple frames, and not the other way around. The burden is on Einstein and his followers to prove that geocentrism as an absolute frame is invalid; the burden is not upon Geocentrists to prove that relativity is invalid. And such an experimental disproof of an

absolute geocentric frame has not yet been achieved. Indeed, since relativity *must* allow a geocentric frame or it disqualifies itself, by its very nature, relativity will *never* be able to prove that an Earth-centered frame is invalid. If it does, then relativity disproves itself as well.

Thus, the only objection relativity can muster to an absolute Geocentric frame is a philosophical objection, in the form of the Copernican Principle.

Of course, followers of Einstein can always protest to Geocentrists, "But relativity forbids choosing an absolute frame!" But since choosing an absolute frame prevents Geocentrists from accepting relativity, such protestations are futile. If you don't believe in relativity, then who cares that relativity forbids something? Atheists don't believe in God, so telling an atheist that God forbids something will elicit a shrug from the atheist.

I offer the following from Wikipedia.org's entry on "The Copernican Principle," with the bold emphasis added by myself.

> "In physical cosmology, the **Copernican principle**, named after Nicolaus Copernicus, states that the Earth is not in a central, specially favored position.
>
> **...**
>
> "In cosmology, **if** one assumes the Copernican principle and observes that the universe appears isotropic or the same in all directions from our vantage-point on Earth, then one can infer that the Universe is generally homogeneous or the same everywhere (at any given time) and is also isotropic about any given point. These two conditions make up the cosmological principle.[3] In practice, astronomers observe that the Universe has heterogeneous or non-uniform structures up to the scale of galactic

> superclusters, filaments and great voids. It becomes more and more homogeneous and isotropic when observed on larger and larger scales, with little detectable structure on scales of more than about 200 million parsecs. However, on scales comparable to the radius of the observable universe, we see systematic changes with distance from the Earth. For instance, galaxies contain more young stars and are less clustered, and quasars appear more numerous. **While this might suggest that the Earth is at the center of the Universe**, **the Copernican principle requires us to interpret it as evidence for the evolution of the Universe with time:** this distant light has taken most of the age of the Universe to reach and shows us the Universe when it was young. The most distant light of all, cosmic microwave background radiation, is isotropic to at least one part in a thousand.
>
> "Modern mathematical cosmology is **based on the *assumption*** that the Cosmological principle is almost, but not exactly, true on the largest scales. The Copernican principle represents the irreducible **philosophical assumption** needed to justify this, when combined with the observations."

Basically, what the above means is that observational evidence seems to indicate that the Earth is at the center of the universe. But since scientists philosophically believe that Earth is not in a special location in the universe, they take the observational evidence to mean that the universe looks the same from *any* location. This is an exact summation of how scientists view the universe. **Nothing more than a mere philosophical belief leads scientists to conclude that we are not at the center of the universe.** This is an inarguable fact. The universe appears non-homogenous (as if

we are at the center), but scientists prefer the notion that we aren't at the center, so they simply assume (the Copernican principle) that we aren't, which means that *every* spot in the universe will appear to be at the center.

More from wikipedia.org's article on "The Copernican Principle" (emphasis my own).

> The Copernican principle **has never been proven, and** in the most general sense **cannot be proven**, but it is implicit in many modern theories of physics.

Just as the idea that the Earth is not at the center of the universe cannot and has never been proven, relativity cannot and never has proven that the Earth is not at the center of the universe. Indeed, relativity must concede that it's perfectly correct to say that from one viewpoint Earth is at the center of the universe. If relativity doesn't concede such, then it thereby disproves itself. If someone claims that the Earth is the absolute frame and is at the center of the universe, the only thing Einstein's supporters can do is say, "Shame on you! We forbid it!" But their objection has no teeth, because they can offer absolutely NOTHING to experimentally prove that Earth is not absolutely motionless at the center of the universe. And any scientist who claims otherwise is either being deliberately dishonest, or doesn't truly understand relativity.

Anyone who wants to believe that Earth is in an absolutely privileged place at the center of the universe is perfectly safe in thumbing his nose at the outraged relativist and crowing, "Na nah na nah na nah! Cant touch me!" Cries of "Crackpot!" and "Lunatic!" are completely unfounded and unjustified, and are made from a place of ignorance.

And on that note, here is a further excerpt from Wikipedia.org's article on "The Copernican Principle."

> "Michael Rowan-Robinson emphasizes the importance of the Copernican principle: 'It is evident that in the post-Copernican era of human history, no well-informed and rational person can imagine that the Earth occupies a unique position in the universe.'"

To which I respond, yes, I can. And I don't have to imagine.

All sarcasm aside, Mr. Rowan-Robinson's assertion is fatuous, given Wikipedia's correct statement that the Copernican Principle has never been and never can be proven. The truth of the Copernican Principle is a matter of philosophy, and as such, whether it is true or not is a personal opinion, not a fact, and it is a bit ridiculous and arrogant to state that no well-informed and rational person can disagree with your opinion. That's like saying, "Vanilla ice cream is the best ice cream in the world, and no well-informed and rational person can disagree with that."

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The following are my responses to an article on UniverseToday.com about more evidence that the Earth is not at the center of the universe. I include it to demonstrate how misleading scientists can be about the subject of a geocentric universe. Quotes from the article are in *italics*, while my responses are in a normal font.

> *"A decade ago, it was discovered the Universe's expansion was accelerating. This continually expanding Universe was attributed to dark energy, the highly repulsive and mysterious stuff that has yet to be detected. But some scientists came up with an alternate theory where Earth was near the centre of a giant void or bubble, mostly empty of matter. But new calculations solidify the case that dark energy permeates the cosmos."* Source: http://www.universetoday.com/22912/more-evidence-

earth-is-not-center-of-universe

If Earth is at the center of the universe and at the center of a violent ancient explosion (a Big Bang), then the further one gets from the center, the cooler things will be: they will be red-shifted. And perhaps as time passes, they will cool faster, so they will become red-shifted at an increasing rate.

> *"Furthermore, if there was a point of origin (the center) of the Big Bang similar to typical explosions, then that point and all regions near it would be comparatively warmer than all others. That is, as you move further from the center of a typical explosion, you would expect to measure cooler temperatures."*
> http://www.universetoday.com/36653/center-of-the-universe/

Exactly. So the Earth being at the center of the universe is in keeping with astronomical evidence: In every direction we look, Earth is at the center of a sea of red-shifted stars, and the further out one looks, the more the stars are red-shifted. You can look at this red-shifting as either being due to a velocity shift as the stars move away from us, or as being due to space and everything in it being cooler the further out one goes.

> *"While dark energy sometimes seems pretty far-fetched – with its mysterious and so far undetectable properties – the alternate "void" theory of why the Universe is ever-expanding contains a problem, in that it violates the long held Copernican Principle."* Source: http://www.universetoday.com/22912/more-evidence-earth-is-not-center-of-universe

According to the above, the alternate "void" theory cannot be correct because it violates a widely accepted philosophical principle. In other words, we have here a case of scientists invalidating a theory simply because it goes against widely held belief.

> *"Although the Copernican Principle has become a pillar of modern cosmology, finding conclusive evidence that our neighborhood of the Universe really isn't special has proven difficult."*
> Source: http://www.universetoday.com/22912/more-evidence-earth-is-not-center-of-universe

Exactly what I've been saying. There is no proof that the Earth is not at the center of the universe. Saying that it's not is a mere philosophical preference.

> *"The team's calculations instead solidify the conventional view that an enigmatic dark energy fills the cosmos and is responsible for the acceleration of the Universe. 'Recent advances in data collection have brought us to the era of precision cosmology,' says Zibin. 'Void models are terrible at explaining the new data, but the standard dark energy model works very well.'"*
> Source: http://www.universetoday.com/22912/more-evidence-earth-is-not-center-of-universe

What the above quotations say is that, alternative models are terrible at explaining the new data. But the standard model can explain the data if its proponents make up a completely ad-hoc, hypothetical stuff called "dark energy" that has never been detected. Very nice. What they're not directly saying is that their standard model is just as terrible as the alternative model at explaining the data, but they can mask that terribleness by pulling dark matter out

of their butts and using it to spackle the hole in their theory. Is that beauty in science? Is this what is known as "elegance?"

> *"'Since we can only observe the Universe from Earth, it's really hard to determine if we're in a 'special place,' says Zibin. 'But we've now learned that our location is much more ordinary than the strange dark energy that fills the Universe.'"*
> Source: http://www.universetoday.com/22912/more-evidence-earth-is-not-center-of-universe

Implying basically that Earth at the center of the universe is strange, and that Earth not at the center of the universe is <u>not</u> strange <u>only</u> if one makes up a strange entity called "dark energy." I call this procedure "transference of strangeness."

> *"For us to get a near accurate analogy, it is important that the observation be limited to the surface alone. If we try to interpret the expansion as being manifested by the whole balloon, we will be tempted into interpreting the geometric center of the balloon as the center of the expanding Universe."* http://www.universetoday.com/36653/center-of-the-universe

So you want us to confine the analogy to the surface of the balloon, because if we don't, then we'll see that the analogy could be applied to <u>both</u> an Earth-centered and a non-Earth-centered universe. How convenient. To exclude a non-Earth-centered model, proponents of an Earth-centered universe can likewise insist that the analogy be confined to the center of the balloon.

> *"Going back, if we just focus on the surface, you'll notice that each and every dot will drift farther away from*

> *adjacent ones and that no single dot will appear as the center."*
> Source: http://www.universetoday.com/36653/center-of-the-universe/

Yes. And going back, if we just focus on the center, you'll notice that each and every dot will drift farther away from adjacent ones and that a single dot will appear as the center. What's your point? I refuse to allow your stipulation that we must focus on the surface only, and then listen as you crow that you've somehow discredited an Earth-centered universe. You can't present an analogy that could support either viewpoint and, simply by making an ad-hoc exclusion of the opposing viewpoint, claim that the analogy supports only <u>your</u> viewpoint. That's ridiculous.

> *"In 1610, Galileo used his first rudimentary telescope to observe that Venus went in phases just like the Moon. This went against the theory that everything orbited the Earth, and was further evidence that it goes around the Sun. Galileo also observed how Jupiter has 4 major moons that orbit it. This broke the previous believe that all objects orbit the Earth."*
> Source: http://www.universetoday.com/18097/the-earth-goes-around-the-sun/

Actually, it wasn't further evidence that Earth goes around the sun. It was further evidence that the geocentric model needed to be modified, not completely abandoned. Scientists like to modify theories, as evidenced by their propensity for making up things like "dark energy" to plaster the holes in their theories. The geocentric theory can be modified by saying that the universe *as a whole* revolves around Earth. This allows for planets to orbit the sun even as the sun orbits the Earth.

> *"The motion of the Earth as it goes around the Sun is well calculated today. Space agencies use these calculations to launch spacecraft to explore the other planets in the Solar System. If everything went around the Earth, we'd know by now."* Source: http://www.universetoday.com/18097/the-earth-goes-around-the-sun/

Yes, and the motion of the universe around the Earth could be equally well calculated if enough time were devoted to it. People have been working at refining the heliocentric model for four hundred years. Imagine how accurate the geocentric model could be today if it hadn't been abandoned merely by philosophical preference at the start of the so-called "scientific revolution."

The only difference between an Earth-centered universe and a non-Earth-centered universe is a choice between coordinate systems! Any modern day scientist who doesn't acknowledge this truth is guilty, at best, of deceiving himself out of ignorance, and at worst, of deliberately deceiving the public.

In summary, here are the facts:

- At the end of the 19th Century, there was incontrovertible evidence supporting the view that the Earth was motionless in space (Michelson-Morley).
- Scientists completely ignored this "preposterous" view for decades, searching for an alternate explanation for Michelson-Morley. They had an explanation readily available, but it was an unthinkable and philosophically unacceptable explanation (an attitude completely against the spirit of scientific inquiry), so they puzzled over the results for decades before Einstein came along and developed relativity, rescuing scientists from an Earth-centered universe.
- The motionless-Earth interpretation of Michelson-Morley is still on the table.
- There is observational evidence ("Big Bang" observations) that supports the view that the Earth is at the center of the universe.
- **Every last experiment purported to verify relativity has been conducted relative to the Earth alone.** In other words, relativity has only been "proven" from inside an Earth-centered inertial frame! Despite what relativity's supporters would have the world believe, an absolute, Earth-centered frame has never been ruled out. Thus **it is premature for relativity's adherents to claim that it applies universally.**
- As I've shown in preceding chapters, the special theory of relativity is in conflict with itself and leads to physical impossibilities, thus showing that relativity is untenable in its current form.
- Simply put: Based upon all current evidence, the **only**

scientifically honest stance is that the Earth **is** motionless in space at the center of the universe!

DEATH TO THE LONG-LIVED MUONS!

I'm writing a series of essays on cosmic-ray muons, in addition to the video I already did (it's currently on YouTube). Why am I doing this? Can't I explain my ideas in a single essay? No, I can't. I wrote one, then started second guessing myself and thought of more stuff I might need to address, so I started a second, trying to tackle the subject from a slightly different angle. Then I started second guessing that one, and started a third…

At this point I'm not even sure which one I wrote first, since I keep coming back to each to add and modify, even while working on the others. So if they seem out of sequence, blame it on that. I'm really good at overwriting, and on leaving in details that I think might be or know to be erroneous or superfluous, simply because I don't want to delete a train of thought that I might snag onto at a later date.

Anyway, some single essay may be incomplete or fail on a key point, but hopefully I've written enough to address the fails or unclear points, so that taken together they all get my idea across. Besides, I doubt I'm the first person to see this fatal flaw in the contention that muons are experimental verification of relativity (in fact I know I'm not), so if I don't get my ideas across, surely someone else has or will.

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One of the oft-touted experimental verifications of length contraction and time dilation is the case of the long-lived muons. Muons decay rapidly and thus normally live extremely brief lives. However, muons generated by cosmic rays high in the atmosphere and traveling at relativistic speed are able to survive long enough to

reach the ground, which their "normal" counterparts (i.e. muons at rest in the observer's frame) would not be able to do. The speeding muons thus outlive their "normal" counterparts.

In other words, let's say we have a laboratory on the ground which contains 20 muons, and an observer within the laboratory. We also have 20 muons that have just been generated by cosmic rays near the top of an extremely tall mountain, and these muons speed toward the ground. By the time these muons hit the ground, all 20 muons in the laboratory will long since have decayed. The reason the traveling muons haven't decayed, and have managed to hit the ground, is that for them, time is dilated and is passing at a slower rate, thus they decay more slowly compared to the "normal" laboratory muons.

But — time dilation is reciprocal, right? From the viewpoint of the "traveling" muons, they are actually standing still, while the ground and the laboratory muons speed toward them at relativistic speed. The laboratory muons are thus experiencing time dilation, and thus should outlive the "normal" muons, which are now the "traveling" muons.

I smell a Twins-type paradox here. Which set of muons actually outlives the other? Seems to me that according to reciprocal time dilation, they should both outlive the other, which is physically impossible.

However, according to relativity's supporters, everything is fine and dandy. I quote from *Relativity and Its Roots* by Banesh Hoffmann:

"Let us now look at the situation from the point of view of an observer moving so as to keep pace with the muons. Since the muons are stationary relative to him, he will not observe a relativistic slowing of their decay rates. But he — and the muons — will see the mountain rushing toward them with almost the speed of light, and therefore relative to them the mountain will be much shorter than it was for the observer on the ground. And since,

relative to the muons, the factor by which the height of the mountain contracts is the same as that by which, relative to the ground, the time was slowed, the number of muons reaching the level of the base of the mountain will come out the same in either frame of reference."

That's all well and good. But who would ever assert that in one frame, only, say, 5 muons will reach the ground, while from another frame, 10 muons will reach the ground? Who exactly is questioning that there will be a discrepancy in the number of muons that reach the ground? This is not a photon analysis problem, where we're trying to account for all the photons in the Twins Paradox.

The issue is time dilation, not the number of muons reaching the ground. The issue is which set of muons actually outlives the other, not the number of muons reaching the ground.

My whole point is, this whole muon business is supposedly a demonstration of time dilation and length contraction. The whole premise is that the cosmic-ray muons outlive their "normal" counterparts because they're moving at nearly the speed of light. So why does the relativist say, "Oh, the mountain is shorter from the traveling muon frame by the same degree that time is dilated from the mountain's frame, therefore the number of muons reaching the base of the mountain is the same in both frames. Problem resolved."

Huh? What the hell does that have to do with anything?

It's a non-sequitur. Keep your eye on the ball, people.

There's a Twins Paradox here that can't be resolved by claiming that acceleration breaks the reciprocity, as in the actual Twins Paradox.

The mountain is completely irrelevant to the whole discussion. We could just as easily postulate a stationary mountain next to the "traveling" muons, and say the "traveling" muons are stationary at its base. Each frame will then have a tall mountain stationary next to it, with each mountain in one frame inverted relative to the other frame, so that from whatever frame, one set of muons will be

speeding toward the base of the mountain in the opposing frame. Thus, from the Earth mountain's frame, the mountain in the frame of the cosmic-ray muons will be length-contracted for the "normal" muons. Only now, we see, there are no such things as "normal" muons. There are only muons in relative motion to one another, and the "normal" muons are merely those muons which happen to be stationary relative to whatever observer we're considering.

So the Earth muons might just as easily be considered as the cosmic-ray muons, and vice-versa. The length-contraction of the mountain is completely irrelevant. But if you insist on using it, put a mountain in both frames and apply reciprocal time dilation as relativity says must be allowed lest the theory be invalid.

When this is done, each set of muons, viewed from the other frame, will theoretically live to reach the base of the mountain in the other frame, even though experimentally only the cosmic-ray muons reach the base of the mountain, for which relativity has no explanation, since they can't resort to acceleration in an attempt break the symmetry.

See, here is the heart of the problem: from the viewpoint of the Earth muons, the cosmic-ray muons are still "alive" long after the Earth muons are "dead." And reciprocally, from the point of the view of the cosmic-ray muons, the Earth muons are still "alive" long after the cosmic-ray muons are "dead." It's a physical impossibility. It's like saying that I lived forty years and my cousin lived fifty years, or vice versa, depending upon which one of us you ask. It's impossible, and so the theory that gives rise to such impossibilities is an incorrect theory.

The reason the long-lived muons is allowed as a proof of relativity is that proponents only consider the situation with muons in a single frame, with relative motion between that muon-containing frame and a second frame. If you insert muons into both frames, each stationary relative to their own frame, then the Twins Paradox arises, casting the whole situation in doubt and desperately

in need of a resolution that doesn't come, because in this situation you can't appeal to acceleration to break the symmetry.

The case of the long-lived muons is another iteration of the Twins Paradox, and it has no resolution. The case of the long-lived muons, rather than supporting relativity, actually presents a problem for relativity. The muons disprove relativity, and thus it's outrageous that it's touted as a proof of relativity. The muons are, in actuality, proof that proponents of relativity don't actually understand their own theory, or that they carefully pick and choose which aspect of experimental evidence they're willing to consider. If the full implications of a bit of experimental evidence don't support the theory, then they ignore the full implications and only consider the evidence insofar as it supports the theory.

See, here's a typical statement of the muon "problem:"

"The measurement of the flux of muons at the Earth's surface produced an early dilemma because many more are detected than would be expected, based on their short half-life of 1.56 microseconds. This is a good example of the application of relativistic time dilation to explain the increased particle range for high-speed particles." (Source:http://hyperphysics.phy-astr.gsu.edu/hbase/relativ/muon.html)

That's it. There are more muons, therefore time dilation. End of story. But that's NOT the end of the story. That's far from the end of the story. The muons are a huge problem for relativity. But I will say this. The above excerpt is correct. The muons ARE indeed "a good example of the application of relativistic time dilation to explain the increased particle range for high-speed particles." The muons ARE indeed a good example of how relativity is very shoddily and selectively applied to explain physical phenomena. Sure, we can explain the muons using time dilation. But we'll ignore the rest of the story of the muons, which is a Twins-type paradox with no resolution, thereby disproving special relativity. You can't even resort to the ultimately dead-ended explanation of symmetry-

breaking acceleration, since there's no acceleration involved in the muon problem.

The standard spiel of the Twins Paradox asserts that the paradox is resolved due to the fact that the traveling twin experiences forces, due to acceleration, which the stay-at-home twin does not experience. Inherent in this is the implied fact that if no acceleration occurred, the paradox could not be resolved. If the case of the long-lived muons can be shown to be an iteration of the Twins Paradox, and I think it has been shown to be such an iteration, then the paradox has not been resolved, because there is no acceleration.

So why do cosmic-ray muons outlive their "normal" counterparts? I don't know, but I DO know that it's not for the reasons relativity puts forth. Look elsewhere for an explanation.

A SECOND DEATH
TO THE LONG-LIVED MUONS!

It has been observed and verified through experiment that:

1) muons decay at a fixed, predictable rate governed by natural law
2) muons moving at near light speed relative to an observer outlive muons that are stationary relative to that same observer.

Historically, the relativist has claimed that #2 is experimental verification of the relativistic concepts of time dilation and length contraction.

The relativist should find nothing objectionable in the preceding.

However, in making the claim that #2 is experimental verification of relativity, relativists are actually violating relativity by interpreting the evidence from a preferred frame of reference.

How so, you ask?

I quote from *Relativity and Its Roots* by Banesh Hoffmann:

"Let us now look at the situation from the point of view of an observer moving so as to keep pace with the muons. Since the muons are stationary relative to him, he will not observe a relativistic slowing of their decay rates. But he—and the muons—will see the mountain rushing toward them with almost the speed of light, and therefore relative to them the mountain will be much shorter than it was for the observer on the ground. And since, relative to the muons, the factor by which the height of the

mountain contracts is the same as that by which, relative to the ground, the time was slowed, the number of muons reaching the level of the base of the mountain will come out the same in either frame of reference."

Let me reframe Hoffmann's explanation a bit.

We have a laboratory of such a size that, without time dilation, a muon moving at near light speed would decay before it crossed from one wall to the other. One wall of this laboratory (call it Wall A) is equipped with a device that generates a muon and shoots it across the lab to the opposing wall (Wall B) at near light speed.

Further, Wall B has a container in which muons are constantly generated and decay. These muons are held stationary relative to the laboratory, constituting a natural clock which allows an observer within the laboratory to make calculations.

An observer in the laboratory frame finds muons from Wall A reaching Wall B, which he wouldn't expect unless the moving muons were living longer due to their motion. He also finds that several generations of muons in the container on Wall B have lived and died during the time that a muon from Wall A travels to Wall B. He therefore concludes that muons in motion relative to the laboratory (those from Wall A) are undergoing time dilation and length contraction as in Hoffmann's explanation, and proclaims that relativity has been given experimental support.

But not so fast. Hoffmann and everyone else who explains the muons are actually interpreting the evidence from a preferred frame in violation of relativity. On the face of it, they don't appear to be. After all, Hoffmann says that from the viewpoint of the cosmic ray muons, they are stationary and the mountain is rushing toward them with the speed of light. That's relativistic, isn't it? Why am I saying Hoffmann and everyone else is violating relativity in their interpretation?

And this is why I reframed the standard explanation in terms of a laboratory as I did above. The error becomes more apparent.

See, if we pretend that the muons generated on Wall A remain stationary (i.e. we have a second observer stationary with the Wall A muons), then Wall A rushes away from them at near light speed even as Wall B rushes toward them at the same speed. Yes, from the viewpoint of the Wall A muons, time is passing "normally" but the laboratory is length-contracted, so they don't have as far to travel and thus survive to impact on Wall B. This isn't a problem, and fits with the standard explanation at this point.

However, you will note that in my reframed version of the standard explanation, nothing else in the laboratory has changed position, including the laboratory itself. The only thing that has changed is the initial and final position of the Wall A muons. There can be no question, from either the lab's viewpoint or the Wall-A muons' viewpoint, of who has actually moved.

The only thing that has changed its relation to anything else, both in my reframed illustration and that of Hoffmann and his mountain, is the muons that are supposedly time-dilated from the viewpoint of an observer in an opposing frame.

In other words, the standard explanation of the long-lived muons is given in terms of a preferred reference frame, which violates relativity! Sure the muons live longer, but only from the viewpoint of the a-priori-fixed frame of the mountain or the laboratory! The standard explanation doesn't work if you truly apply the principle of relativity!

What the standard explanation fails to take into account is that whenever you have two frames in relative motion, whichever frame you're considering stationary, it's the muons in the OTHER frame that are the long-lived muons!

If you're truly adhering to relativity, then in Hoffmann's setup, the muons at the top of the mountain, from their viewpoint, will not live to reach the base of the mountain as it rushes toward them, while muons stationary with the base of the mountain (conveniently excluded by Hoffman) will far outlive the cosmic-ray muons

generated at the top of the mountain.

Going back to my laboratory illustration. Keeping true to relativity by making the situation truly reciprocal, muons generated at Wall A will have a "virtual" laboratory enclosing them, with which they remain stationary. I say "virtual" because obviously the walls of one laboratory must be insubstantial so as to pass through the walls of the other. But it doesn't matter which laboratory is chosen to be virtual and which solid; either laboratory could be virtual. *It doesn't matter*. **The laboratories, or mountains, or whatever else my explanation or the standard explanations use, are irrelevant, serving only to mark out an area of space around the muons.**

So we will now have two laboratories to consider, and will re-label things thusly: Lab 1 Wall A, Lab 1 Wall B, Lab2 Wall A, Lab2 Wall B.

The two labs are in relativity motion, but at the instant we begin our consideration, the two labs are in absolute congruence.

We will subsequently have two viewpoints to consider.

First, the viewpoint of an observer in Lab 1. Lab 1's observer says, "I and my lab remain stationary. The muons attached to Lab 2 Wall A are moving across my lab at near light speed and thus are experiencing time dilation. I also find that Lab 2 is length-contracted due to its motion relative to me. I expect to find that several generations of muons attached to my Lab 1 Wall B will have lived and died when the muons attached to Lab 2 Wall A impact my Lab 1 Wall B, and that is exactly what I DO find."

Meanwhile, a Lab 2's observer says, "I and my lab remain stationary. The muons attached to Lab 1 Wall B are moving toward me at near light speed and thus are experiencing time dilation. I also find that Lab 1 is length-contracted due to its motion relative to me. I expect to find that several generations of muons attached to my Lab 2 Wall A to have lived and died when the muons attached to Lab 1 Wall B impact my Lab 2 Wall A, and that is exactly what I DO

find."

Both observers make the same statement, but in reverse. In other words, both situations are now truly reciprocal. Each observer is referring to the changing RELATIONSHIPS (note the plural) relative to his OWN laboratory, rather than referring the changing RELATIONSHIP (note the singular) to the laboratory of a preferred observer.

What is not touted when the muons are presented as evidence of relativity is that the muons are actually an iteration of the famous Twins Paradox. And the Twins Paradox is actually a potential problem, enough of a problem that its existence is acknowledged in every presentation of relativity that you can find. And the way the seeming Paradox is resolved is by pointing out that the situation is not actually reciprocal, since one twin undergoes acceleration, both in leaving and returning to Earth. So there is never any question as to which twin is actually undergoing time dilation, and hence the Paradox is really no paradox at all.

But in the case of the long-lived-muon version of the Twins Paradox, there is no acceleration to resolve the problem. So why, then, do we experimentally observe that one set of muons actually outlives the other?

The only explanation on offer by mainstream science violates relativity by explaining things in terms of a preferred observer. So until the relativist can explain why he chooses this preferred observer over the other, the long-lived muons do NOT support relativity. The muons actually violate relativity.

It's important to note that the only thing actually to be considered is this: we have two sets of muons in relative motion, each separated by a distance. Each set says that it is motionless but this distance is so great that they would die before they could traverse it in the absence of time dilation, while the other set, the moving set, will manage, since it is undergoing time dilation due to its motion.

Relativistically speaking, that's as much as we should be able to say.

However, the misguided relativist, going further, says that one particular set outlives the other because, while experiencing time normally due to being stationary, the distance in question is contracted due to the other set's motion, and hence this particular set is able to traverse the seemingly-untraversable distance (without moving!) before it decays.

The misguided relativist needs to explain why he goes that further step. Based upon what relativistically-consistent reasoning does he make that further step?

That further step may be what we observe in nature, but relativity forbids that further step. Yet relativists make it anyway precisely because that's what we observe in nature. But that further step presents problems for relativity when they try to explain it within a relativistic framework. The preceding "further step" as I described it doesn't seem foolish because I'm misunderstanding things. It seems foolish because it's an actual representation of what relativity must conclude as they try to explain a non-relative natural observation in relative terms. It just can't be done. Relativity predicts that each set of muons will outlive the other, which is clearly nonsensical. Relativity predicts THIS, but instead we observe THAT, and relativity then tries to say THAT is exactly what they predicted.

Sorry, but it doesn't fly.

RIGOR MORTIS IS SETTING IN FOR THE MUONS!

The following is a summation of how two observers in motion at near light speed relative to each other view the situation, according to relativity. I call these The Facts.

From Observer A's viewpoint:

- Observer B is in motion.
- Observer B is experiencing time dilation.
- Everything in Observer B's reference frame (stationary relative to B) is length-contracted, as measured against a yardstick in my reference frame.
- We both measure the same speed for light.

From Observer B's viewpoint:

- Observer A is in motion.
- Observer A is experiencing time dilation.
- Everything in Observer A's reference frame (stationary relative to A) is length-contracted, as measured against a yardstick in my reference frame.
- We both measure the same speed for light.

Applying The Facts to biological twins, one asks the relativist, "If

one twin stays on Earth and the other goes on a rocket tour of the galaxy before finally returning to Earth, how can each twin have aged less than the other?"

And the relativist answers, "Because the twin on the rocket experiences forces (acceleration) during his trip that the Earth-bound twin does not. This breaks the symmetry and allows us to say that the Earth-bound twin is older upon their reunion."

(Of course, I've written earlier that this answer is really a non-answer, because the instant you bring up acceleration, you've brought the so-called paradox into the realm of general relativity, which turns out to be simply shifting the problem without resolving it).

Applying The Facts to the situation of cosmic-ray muons, one asks the relativist, "If observation shows that muons generated by cosmic rays in the upper atmosphere live longer than their twins who are stationary relative to the entire atmosphere, why do The Facts predict that each type of muon will outlive the other?"

And the relativist answers, "Because from their viewpoint, the cosmic-ray muons have the same life expectancy as 'normal' muons, but the upper atmosphere is length-contracted due to its motion, thus the cosmic-ray muons survive to reach the ground."

"Yes, but," one objects, "according to The Facts, from the viewpoint of the cosmic-ray muons, muons stationary relative to the ground and the atmosphere are the ones experiencing time dilation, and so should still be alive when the cosmic-ray muons reach the ground, and should actually outlive the cosmic-ray muons.

"According to *Einstein for Dummies* (page 141), muons in their own reference frame only live for 2.2 microseconds, while time-dilated muons live for 34.8 microseconds. So in the Earth's reference frame, a muon on the ground will live for 2.2 microseconds, while a cosmic-ray muon will live for 34.8 microseconds. Conversely, the cosmic-ray muons will see themselves live for 2.2 microseconds, while an Earth muon will live

for 34.8 microseconds. So how can each type of muon outlive the other, because the length contraction answer you gave doesn't seem to pass muster?"

And the relativist answers, "Hey, I never said anything about one outliving the other. We were discussing why cosmic-ray muons are able to traverse the length of the atmosphere, which, without the relativistic effects of time dilation and length contraction, they should not be able to do. Once they reach the ground, what they do after that is their business. They've reached the ground, therefore they're experiencing time dilation."

And one objects again, "Yes, but you're not answering the question. Even after they reach the ground, relativity still predicts that each one will decay before the other. How is that possible? You said that in the case of the biological twins, acceleration broke the symmetry and let us know who was really aging faster than the other. There's no acceleration in the case of the muons. So how do we explain that the cosmic-ray muons definitely outlive the Earth-bound muons? Because obviously they must, since we've already established that the cosmic-ray muons are the ones actually undergoing time dilation."

The only possible resolution I can see is that, despite protestations about there being no acceleration to appeal to here, there actually is acceleration to appeal to here: there's a gravitational field. And gravitation and acceleration are equivalent, correct?

The problem with this approach is that in this case, both sets of muons are within the same gravitational field. Granted, the Earth-bound muons are deeper inside the gravitational field, so maybe that breaks the symmetry.

But let's appeal to acceleration anyway, as in the standard Twins Paradox, thereby dragging the problem into the realm of general relativity. As I wrote earlier in another bit of writing, this leads us to pseudo-gravity and other considerations, which ultimately leads to

the fact that all reference frames are not created equal, thereby sounding the death knell for relativity.

And anyway, what about the case of muons far enough out in space that they are essentially in a gravity-free environment? Suppose we have two rockets in relative motion at near light speed, each carrying a cargo of muons in its stern. The Facts predict that the cargo in each ship will decay before the cargo in the other ship. So which ACTUALLY decays first? There's no gravity or acceleration to appeal to here to break the symmetry.

I suppose the relativist would object that it's meaningless to ask the question, because if they attempt to get together to solve the problem, one of them must accelerate to match speeds with the other, thereby breaking the symmetry (but not really, because due to general relativity, we can say that the one who activates his thrusters to apparently maneuver into position with the other rocket is actually merely generating a gravitational field that affects the entire universe, causing the universe and everything in it to accelerate, which is absurd).

Suppose they simply communicate by radio, to which the relativist would object that there's no hope there due to the meaninglessness of NOW when considering two observers in relative motion. Trying the radio method complicates the issue by adding a relativity of simultaneity problem.

OK, then. Do it this way: we have two identical rockets ships in constant relative motion at near light speed, and one or the other is said to be moving along a straight line that runs parallel to the other ship. Each ship is so long that the muons in its own reference frame, if traveling at near light speed in the absence of time dilation, would decay before they were able to traverse one ship length. The two ships are so closely situated that when their sterns are aligned, a small protrusion in the stern of each ship will just contact the same protrusion in the other ship without causing any impediment to the relative velocity, allowing the exchange of a brief burst of

information as to the status of each ship's cargo. The Facts predict that each ship should receive a burst saying that the cargo of the other ship has decayed. And each observer will say to himself, "Wait a minute! This violates The Facts! That other guy's cargo should have outlived my own!"

Now wait a minute, I myself protest. Haven't I been ranting that relativity predicts that each biological twin will outlive the other, yet due to symmetry-breaking acceleration, upon their reunion the twin finds that the Earth-bound twin is older? Why does my little thought experiment above now predict that both sets of muons are decayed at the brief instant of their would-be union?

It's because I have just logically shown that time dilation in the absence of gravitational influence does not exist.

And since the thought experiment I outlined above is actually just the standard cosmic-ray muon/Earth's atmosphere setup moved into outer space, what I've shown is that The Facts predict complete reciprocity in the decay, which the relativist modifies to predict asymmetric decay due to gravitation, which is what is found in actual experiment.

What we must conclude at this point is that time dilation, by relativity's own logic, is caused either by gravitation or acceleration, not by simply moving at constant relativistic velocity.

Further following this logic, it must be the case that only things undergoing acceleration or being influenced by gravitation can be time-dilated. When we compare two frames that are simply in relative uniform motion, neither frame will be time-dilated.

Let me outline my logic in case it isn't clear.

First, we have The Facts, as given at the start of this essay.

Next, we have my thought experiment involving two rockets each carrying a cargo of muons. Each rocket is so long that, in the absence of the existence of time dilation, muons traveling at near light speed would decay before they traversed the length of the rocket. Thus, in the time it takes the moving rocket to traverse the

length of the stationary rocket, the stationary rocket's cargo will have decayed (since each rocket regards itself as being at rest and thus not experiencing time dilation as given in The Facts). Thus, when the protrusions on the stern of each ship come into contact, each rocket will report that its cargo has decayed. In other words, neither cargo of muons has outlived the other as predicted by The Facts, thus leading to the inescapable conclusion that time dilation cannot be a reality in this case.

Continuing: we then have the case of the long-lived muons, where cosmic-ray muons traveling at near light speed outlive their Earth-bound counterparts. This is proven by experiment. According to the general relativistic explanation, this asymmetric deviation from the symmetric prediction of The Facts is caused by gravity. But both sets of muons (Earth-bound and upper-atmosphere cosmic-ray muons) are experiencing gravity. However, the cosmic-ray muons are experiencing an increasing gravitational force. They start off in the upper atmosphere where gravity is slightly weaker, and travel downward, into increasing gravitational strength. It thus cannot the mere presence of gravity which breaks the symmetry in the case of the cosmic-ray muons, but changing gravitational strength, or potential.

Considering both situations, I conclude that, if time dilation exists, it must be caused by gravity or acceleration, and that time dilation only exists when either is present. *Time dilation is* ***not present*** *in the absence of gravity or acceleration****, regardless of relativistic velocity.***

BEATING A DEAD MUON!

In an earlier writing, I laid out a summary of The Facts according to relativity. Here they are again for reference:

The following is a summation of how two observers in motion at near light speed relative to each other view the situation, according to relativity. I call these The Facts.

From Observer A's viewpoint:

- Observer B is in motion.
- Observer B is experiencing time dilation.
- Everything in Observer B's reference frame (stationary relative to B) is length-contracted, as measured against a yardstick in my reference frame.
- We both measure the same speed for light.

From Observer B's viewpoint:

- Observer A is in motion.
- Observer A is experiencing time dilation.
- Everything in Observer A's reference frame (stationary relative to A) is length-contracted, as measured against a yardstick in my reference frame.
- We both measure the same speed for light.

In the past, The Facts have led me to berate relativity, since it makes the prediction that two biological twins will each age more

slowly than the other.

But let me reconsider The Facts. Basically, The Facts have each observer saying, "Everything is normal from my viewpoint, but I believe that everything is not normal from viewpoint of the other observer."

Each observer reports that physically, everything is normal within his reference frame. He also expresses his belief that everything is not normal for the other observer.

Do you see what's wrong with this picture? Each observer gives a description of his current experience of the natural world, as well as a description of what he believes to be the other observer's current experience of the world.

Do you see it yet?

It does not matter what one observer believes about the other observer's experience of the world. All that matters is each observer's own experience. Both observers report that everything is normal in their reference frame. It's completely irrelevant what each observer believes about the other's reference frame! Both observers have firsthand experience that their world is normal. They have no experience of the other observer's reference frame.

In the case of science, reality must trump belief, whether that belief is based upon logic or upon mathematical calculations. In other words, it is indeed a fact that both observers believe that the other is experiencing time dilation and other effects of motion. But if it is a fact that I believe Santa Claus exists, the fact that I believe in Santa Claus does not make Santa Claus exist. There is thus actually no conflict generated by The Facts, since we are free to discount the beliefs of each observer as to what the other is experiencing. The seeming paradox that The Facts predict that each biological twin will age more slowly than the other is due to a mere conflict of beliefs, a conflict that is resolved by allowing physical reality to trump beliefs about physical reality.

Both observers report that everything is normal. Therefore,

everything MUST BE NORMAL in both reference frames! This is why, despite The Facts, both observers in my muon thought experiment in a previous writing report that their muons have decayed, in conflict with each observer's belief that the other observer's muons should still be alive when they exchange their reports, which led me to discount the existence of time dilation when two observers are in relative uniform motion.

However, despite the preceding, there is experimental evidence that time dilation exists in the case of cosmic-ray muons when compared to their Earth-bound counterparts.

Taking this experimental fact together with my demonstration that time dilation is logically ruled out in the case of relative motion at constant velocity, it would appear that **time dilation only exists within a gravitational field, or when an object undergoes acceleration. In all other situations, time dilation ceases to be a consideration, as it does not exist.**

In light of this, one must wonder how Einstein came to theorize the existence of time dilation, since acceleration was excluded from the special theory. After all, according to relativity, time dilation is a consequence of the constancy of the speed of light. But if it's shown that time dilation does not exist in cases of uniform relative motion, then light speed should not be constant. It need only be constant for all observers undergoing acceleration or gravitation.

Of course, if light speed is not constant, then interferometer results once again become a problem. Unless you're a Geocentrist.

But wait, you might object. If one of the observers, considering himself stationary, looks through a telescope at the other observer, he'll see a clock on the other observer's ship ticking more slowly. Therefore time dilation MUST exist.

My response: not really. Because depending on whether the other ship is approaching or receding when our observer looks through his telescope, he'll see the other clock either ticking faster or slower. Do you really think the rate at which time passes depends

upon the direction of the other ship's travel? The Doppler Effect doesn't tell us about time dilation. It tells us whether the ship is approaching or receding.

Yes, you object, but the time dilation is in addition to the Doppler Effect.

My response: Okay, fine. The rate at which time is passing depends upon which direction the ship is traveling. Throw a new complication into relativity if you want to. And then YOU try to explain why time dilation should depend upon direction of travel.

You could further protest that The Facts as I've formulated them presuppose my conclusion because The Facts are written from a subjective viewpoint. You protest that it's not a subjective belief of one observer whether or not the other observer is experiencing time dilation. There is an objective fact that whichever frame is regarded as being at rest, the other is time dilated and length contracted. It's not a matter of belief; it's a matter of reality.

But isn't "objective" another way of saying "absolute"? Isn't bringing objectivity into relativity forbidden by relativity? Relativity involves being able to move from one subjective viewpoint to another and find that all viewpoints are equal. There is nothing objective about it. Relativity is inherently subjective.

Besides, by trying to rephrase The Facts objectively, you will basically be saying that it is an objective fact that whichever frame subjectively regards itself as being at rest…It's redundant, because relativity requires that you assume the subjective viewpoint of one particular frame, but that you're not bound to remain in that frame. But you are always viewing things subjectively from one particular frame. So The Facts are not framed in such a way that they presuppose my conclusion. They're framed in the only way allowed by relativity.

HOW TO DETECT ABSOLUTE SIMULTANEITY

Relativity makes the following claim:

"Events which are simultaneous with reference to the embankment are not simultaneous with respect to the train, and vice versa (relativity of simultaneity). Every reference-body (coordinate system) has its own particular time; unless we are told the reference-body to which the statement of time refers, there is no meaning in a statement of the time of an event.

"Now before the advent of the theory of relativity, it had always tacitly been assumed in physics that the statement of time had an absolute significance, i.e., that it is independent of the state of motion of a body of reference. But we have just seen that this assumption is incompatible with the most natural definition of simultaneity." (*Relativity* Chapter Nine)

Einstein comes to this conclusion by using the thought experiment of two bolts of lightning striking either end of the train. An observer along the embankment sees the lightning strikes as simultaneous, while an observer inside the train, moving with respect to the embankment, is also moving toward the lightning flash at the front of the train, and receding from the flash at the rear of the train. The train's observer will thus see the flash at the front of the train first, and conclude that the lightning struck the front of the train first.

Einstein uses this simple thought experiment to draw sweeping conclusions about the nature of time and simultaneity.

But adding a tiny detail to Einstein's thought experiment will actually invalidate his conclusions about the relativity of simultaneity.

Let's take Einstein's thought experiment and add a simple device I will call a "simultaneity detector," or SD. This device consists of several parts. First is a clock at the center of the train carriage. This clock need not be synchronized with clocks at the front and back of the train, or anywhere else. It's simply a clock whose time can be independent of any other clock. Next, there is a lightning rod at each end of the train, equidistant from the central clock. Each rod has an attached length of wire that feeds into the central clock. Each wire is exactly the same length as the other. The clock is able to detect when a current reaches it through either wire, and records the time at that instant, so that any observer will be able to consult the clock for a readout of the exact time a current was recorded in either wire.

Now, when the lightning bolts strike the lightning rods at either end of the train, a current will flow through the rod's respective wire and reach the clock, where the time of the current's detection will be recorded.

How does this alter Einstein's experiment in any significant way? Well, it takes the determination of simultaneity out of the realm of relativity and puts it into classical Newtonian-Galilean physics. This is because the current in the wire will not behave as the light does. Consider: electrical current is a flow of electrons within a wire. The wire is moving along with the train, and hence will obey classic addition of velocities, which light does not. Thus, the detection of current in the wires will be an arbiter of simultaneity.

How so?

Well, if the embankment observer sees the lightning strikes as simultaneous, while he will see the train's observer rushing toward the forward flash and receding from the rear-ward flash, he will not likewise see the train's observer rushing toward the front current and away from the rear current. The two currents will reach the

central clock together and will each receive the same time stamp from the clock.

However, the train's observer will see things differently. He will see the flashes as non-simultaneous, yet will be astonished to find that the central clock tells him the currents have the same time stamp. He will thus conclude that he must be moving.

Unlike with Einstein's thought experiment, where the observers are free to accept that they disagree on simultaneity because there are no actual, physical consequences of such disagreement, the central clock cannot physically display different time stamps depending upon who consults it. There is an absolute fact as to what time the currents were detected, according to the central clock.

You might wonder why I don't just have the central clock recording the time at which each flash reaches it. I'll reiterate my earlier reasoning for you: the current in the wire obeys classic addition of velocities, while the light flashes, according to relativity, do not. The current in the wire is not light; it is movement of electrons.

Think about it. If the observer on the embankment were to consider the current in the way that he considers light, then he must also consider the train observer in the same way. Light does not hold to addition of velocities. If the electrons and the train observer likewise did not hold to such, then if the train's observer were to walk from the rear of the train toward the front, then the rear wall would be racing toward him even as the front wall was receding, just as with the flashes of light. Same with the current. Even as the current from the rear flowed through the wire, the central clock would be receding from it even as the central clock raced toward the front current, and the central clock would stamp the current from the front as reaching it first, in conflict with the embankment observer's assertion that the strikes were simultaneous.

You might object that the train's observer would indeed drift backward if he were to jump up and down; he only moves forward

with the train because he is attached to it. But this violates physics; remember Newton's first law of motion, and Galilean relativity? Relativity doesn't discard those. If you believe that the Earth is rotating, then if these laws weren't true, you could jump straight up in the air and land in a different spot.

You might further object that I am incorrect. Current in a wire behaves the same as light, and thus the time stamps from the central clock will confirm the train observer's conclusion that the front strike happened first. OK. But in such a case, we are left with physical evidence that contradicts the embankment observer's assessment that the strikes were simultaneous. We now have the testimony of the train observer and the testimony of the central clock to contradict the embankment observer. This would allow the train's observer to assert that the embankment observer is the one in motion, which on the face of it seems okay, since we now have reciprocity, one of the hallmarks of special relativity. Each observer is allowed to conclude that he is at rest while the other observer is the one in motion. But this objection, as I've pointed out above, comes at the cost of violating physical laws which relativity retains: "...in reality there is not the least incompatibility between the principle of relativity, and that by systematically holding fast to both these laws a logically rigid theory could be arrived at." (*Relativity* Chapter Seven).

As simple evidence that electrons must hold to classical relativity, I offer the following: our bodies contain many, many electrons. So if you try to assert that electrons don't hold to classical relativity and instead behave as light does, then you must throw out the classical principle of relativity, since EVERYTHING within the rocket (rocket, train, whatever) is made of electrons. Even the walls of the train. So if the ship, train, rocket, whatever, is moving at near light speed, in what sense could the outside observer say that he sees the train observer racing toward the forward flash even as he recedes from the rear flash? Matter does not behave like light.

Matter adheres to addition of velocities, light does not.

NOTE TO SELF: But perhaps matter behaves more like light the faster it goes, so that at near light speed it is a lot more like light than matter. And perhaps in such a case the central clock actually CAN display two different time stamps depending upon who observes it, existing in both states until one or the other observes it, much like Schrödinger's Cat. Connection between relativity and quantum mechanics? Even such a situation would still be a blow to relativity, since, as evidenced by Einstein's thought experiments, relativity still considers matter to behave like matter even at relativistic speeds, as evidenced by matter adhering to the addition of velocities in the thought experiments.

Now, I should point out that the weakness of the preceding is my assertion that electricity flowing through a wire does not behave like light, instead obeying addition of velocities. I can find nothing to support this assertion. I recall stumbling across an article long ago that confirmed this, but I have no idea where I stumbled across that article, and I can find nothing to support me now. But I can find nothing to refute my assertion either. But it seems reasonable to me that since electrons carry the flow of electrical energy through a wire, then they can't behave in such a way that, were someone in a moving spaceship to flick a light switch on the front wall, then a light bulb at the center of the ship would turn on sooner than it would if the person flicked a switch on the rear wall. Such behavior would require the electrons to forsake the addition of velocities, and if electrons in a wire do so, why shouldn't my entire body also forsake the addition of velocities? Such behavior would lead to a different world than the one we observe.

Anyway, realizing as I do that the weakness of my preceding thought experiment is its reliance on the wire current not behaving like light, I have a few variations on the thought experiment, using

things that definitely don't have a relation to electricity. These are earlier iterations of the above thought experiment. I actually wrote the following well before I came up with the final version as above.

Imagine a cube-shaped ship moving through space. There is relativistic motion between this ship and an outside observer. All the dimensions of the ship are exactly equal as measured by an observer within the ship. Also, there is a strip of some sort of substance connecting the forward wall with the aft wall, like a string or something. The strip, when struck by lightning, undergoes a chemical reaction that proceeds along the string from the source of the strike, so that it changes to a different color, the different color depending upon the source of the strike. Say a strike on the forward wall causes the string to turn blue traveling backward, and a strike on the aft wall causes the string to turn red traveling forward. The chemical reaction stops when each reaction meets the other.

It seems to me that the chemical reaction will travel along the string at a constant rate that can't possibly depend upon the motion (or lack of it) of either the ship or an outside observer. In other words, you can't run into a situation where the walls are moving toward or receding from the "leading edge" of the chemical reaction, since the reaction is relative to the string alone rather than relative to an observer, i.e. it's not the same situation as light traveling fore or aft.

Now lightning strikes the fore and aft walls, kicking off the reaction, which travels along the string in each direction, heading aft along the strip from the forward wall, and running forward along the strip from the aft wall.

If simultaneity is truly relative, then when the reactions run their course, the length of the string that is red and the length that is blue will depend upon which observer examines the strip. If the outside observer says the lightning strikes were simultaneous, and he considers the ship to be in motion, then the string should be equal lengths red and blue when he examines it, the point at which blue

turns to red being at the exact center of the ship. Likewise, when the ship's observer, considering the strikes to have been non-simultaneous, examines the string, he should find that more of the string is red, the point at which red turns to blue being off center toward the rear of the ship. If simultaneity is truly relative, then the amount of red and blue on the string should be different depending upon who examines it, which should be physically impossible, therefore simultaneity cannot possibly be relative.

Here's an even better visualization: imagine that the fore and aft walls of the ship are connected by a steel pipe, and that the pipe is filled with gunpowder. This is some sort of strange gunpowder that explodes at the point where the two flames come together, bursting the pipe. So the lightning strikes set off the gunpowder, and a flame runs forward from the rear wall and rearward from the front wall. Where the two flames meet, the pipe explodes, marking the spot. If relativity is correct, then the spot at which the pipe explodes will depend upon which observer we ask.

Better yet, let's put a rifle at each wall, triggered by the lightning strikes. And the interior of a ship is a perfect vacuum, so that there's no drag on the bullets. According to relativity, depending upon which observer we ask, the observer at the center of the ship is struck by both bullets at the same time, or he's struck by the front bullet first.

All of the above versions transfer a relativistic problem into the realm of Galilean relativity. You could argue that the difference in the timing of the bullet strikes, or the difference in the amounts of red and blue on the string, or the position at which the pipe burst, as measured by either observer, would be too infinitesimal to measure, that such a Galilean experiment would be too "coarse," or lack the temporal or spatial resolution to measure such relativistic effects, and is hence worthless, but that's just avoiding the issue. I could argue back that in Einstein's thought experiment, human observers couldn't possibly tell with their naked eyes whether or not two

lightning strikes are simultaneous because our conscious brains lack that sort of temporal resolution, and that Einstein's thought experiment is worthless.

The take-home lesson from this thought experiment is that we can't rely on our eyes and upon mathematical calculations to determine simultaneity. Just because someone SEES an event as simultaneous or non-simultaneous, he is not justified in using mere math to support the conclusion of his eyes. There MUST be an absolute physical fact as to whether the lightning strikes are simultaneous or non-simultaneous.

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Look at it another way. According to relativity, no observer disagrees about the timing of the strikes reaching the centrally-placed train observer. In other words, neither observer disagrees that light from the strikes reaches the eyes of the central observer at simultaneously or non-simultaneously. The only thing in disagreement among the observers is the timing of the strikes upon the walls. Each observer disagrees about the simultaneity (or lack of it) of separate events that are distant from them, but neither observer disagrees about the simultaneity (or lack of it) of events taking place in the immediate locale of one observer or the other. Relativity views things this way because of the theoretical proposal that the speed of light is the same for all observers.

However, no observer should disagree about the simultaneity (or lack of it) of events that are distant from them *if these events do not involve light*.

For example, in classical mechanics, we would expect these results: regardless of whether or not a ship is said to be moving, if a central observer were to throw two balls at the same time, one toward the rear of the ship and one toward the front, the balls would hit the front and back wall at the same time from all viewpoints, and rebound to the central observer, who would catch them at the same time. This is how any observer would regard the situation, even if

there were relative motion between the ship and an outside observer. This is the classical Galilean principle of relativity.

Einstein did not invalidate the classical Galilean principle of relativity. He retained it, and so "non-light" objects will still behave the same according to all observers. The balls hit the walls simultaneously according to all observers, even those in motion relative to the ship. If they did not, then Newton's laws of motion would be invalidated.

Likewise, suppose the front and rear walls of the ship are both equipped with a device that shoots balls at the centrally-placed observer. Neither the ship's observer nor the outside observer will disagree about the simultaneity of the shooting of balls. If the balls reach the central observer simultaneously, both observers will agree that the devices must have shot the balls simultaneously. If the balls reach the central observer non-simultaneously, both observers will agree that the devices must have shot the balls non-simultaneously.

Einstein says explicitly at the end of Chapter Seven of *Relativity* that this classical Galilean principle of relativity still holds because "…in reality there is not the least incompatibility between the principle of relativity and the law of propagation of light, and that by systematically holding fast to both these laws a logically rigid theory could be arrived at."

However, it can easily be shown logically that Einstein does in fact NOT "systematically hold fast to both these laws."

How so? Suppose that there is relative motion between the ship and an outside observer. Have lightning strikes trigger the ball-shooting devices on the front and rear walls. If the lightning strikes happen simultaneously according to the outside observer, then the devices trigger at the same time and their balls should reach the central observer simultaneously regardless of the state of motion of the central observer, in keeping with the classical Galilean principle of relativity and the laws of Newton

However, though they disagree upon the timing of the strikes,

both observers agree that light from the lightning strikes reaches the central ship observer non-simultaneously. The ship's observer, believing he is motionless, will therefore say that the strikes happened non-simultaneously, in conflict with the outside observer. Then he will be confronted by the fact that the balls, triggered by the lightning strikes, reached him simultaneously, and he will puzzle over how non-simultaneous lightning strikes can trigger the ball-shooting devices in such a way that the balls reach him simultaneously.

See, Einstein so insists on holding fast to Galilean relativity that he uses it to require that all observers measure the same speed for light, regardless of their state of motion. But ironically, the end result of holding fast to it is that we must abandon it in order to explain the discrepancies that holding fast to it introduces into the theory of relativity. In other words, holding fast to the validity of the classical principle of relativity is crucial to the development of a theory which invalidates the classical principle of relativity. It's almost like that time travel paradox, where a man goes back in time and kills his own grandfather, thereby making it so that he himself was never born, leaving us with the puzzle of how he went back in time to kill his own grandfather. In this case, relativity goes back and kills its own grandfather theory, leaving us to wonder how relativity was developed in the first place.

Let me outline the logic of the whole thing.

1) According to classical mechanics, neither observer, regardless of the relative motion involved, will disagree neither on the simultaneity or non-simultaneity of the firing of the ball shooters, nor on the simultaneity or non-simultaneity of the balls reaching the central observer.

2) When there is relative motion, events which are simultaneous according to the outside observer will be non-simultaneous according to the ship's observer.

3) If we go by 2), then if the outside observer says the shooters

fired simultaneously, the ship's observer…

You see the problem? You can't make definitive conclusions in 3), because 1) and 2) are in conflict. And they're in conflict because light, upon which 2) is based, is unique from everything else in that it does not obey the addition of velocities on which 1) is based.

Simply put, recalling Einstein's statement, 1) is based on the classical principle of relativity, and 2) is based on Einstein's assertion, made as he tries to hold onto classical relativity, that all observers measure the same speed of light regardless of their state of motion. Thus, despite Einstein's assertion that "…in reality there is not the least incompatibility between the principle of relativity and the law of propagation of light, and that by systematically holding fast to both these laws a logically rigid theory could be arrived at," a logically rigid theory could NOT be arrived at. Rather, a contradictory theory is arrived at.

I hope I'm getting my point across. This is difficult to explain, because relativity is a "Whack-a-Mole theory." It makes one set of contradictory circumstances compatible, but in doing so makes another set of circumstances incompatible, so then relativity whacks those circumstances into compatibility, thereby making incompatibilities elsewhere, so that only the relativistic aspect currently under examination is non-contradictory.

Then, by attempting to explain why relativity is wrong, one is forced to play the same game of Whack-a-Mole. It's like trying to show that the game is futile by playing the game itself. It then appears that the debunker is the one in error, since he's the one currently playing the game. But in reality, the first person should never have started playing the game. The best solution would have been for the first player, realizing the futility of the game, to step back and denounce the game (the game being Einstein's relativity, of course).

THE FAMOUS TWINS
STEP INTO GENERAL RELATIVITY
or
OUT OF THE FRYING PAN
AND INTO THE FIRE!

In the past, most of my ranting against Relativity has been confined to the special theory. Now I'm going to rectify that and focus on general relativity.

So here goes.

At the end of Chapter Eighteen of *Relativity*, Albert Einstein writes that it seems impossible to generalize special relativity to all motion both uniform and non-uniform, as evidenced by the simple consideration of applying the brakes to the train in his thought experiment. Applying the brakes causes the train occupants to feel a jerk that compels us to "grant a kind of absolute reality to non-uniform motion." But he assures us that this conclusion cannot be upheld.

He then presents the equivalence of gravitation and acceleration, and at the end of Chapter Twenty, he returns to the situation where the brakes are applied on the train and the occupant feels a jerk as the train decelerates. But now, Einstein says that in light of what he has just presented, the occupant of the train "is compelled by nobody to refer this jerk to a 'real' acceleration (retardation) of the carriage," since the occupant is alternatively free to say that during the application of the train brakes, "there exists…a gravitational field which is directed forwards and which is variable with respect to

time. Under the influence of this field, the embankment together with the earth moves non-uniformly in such a manner that their original velocity in the backwards direction is continuously reduced."

[Insert dramatic pause as Einstein the stand-up comedian waits for the joke to sink in, followed by a few titters of nervous laughter]

Okay. So according to Einstein, when the brakes are applied, the train's occupant, instead of concluding that the jerk he feels is due to the train stopping, can just as validly conclude that the pressing of the brakes somehow generates a gravity field that causes the Earth, and by implication the entire universe, to stop moving past the train!

Yes, that seems a perfectly reasonable conclusion for the occupant to make.

Of course, suppose the occupant of our train decides to examine how the brakes work. Will he not wonder how a simple device that stops the spinning of the train's wheels also somehow generates a gravity field that affects the entire universe? If you're going to allow this notion, then you're going to have to come up with an explanation/theory of how the application of simple friction to a spinning wheel generates a gravitational force that acts on the entire universe.

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Think about it. Say I have an overturned wagon, so that the wheels are spinning freely, in contact with nothing but the air. According to Einstein's little exposition at the end of Chapter Twenty, the act of pressing a stick against the spinning wheel of my overturned wagon (applying brakes to the wheel) should generate a gravity field. Where's the explanation for how this is possible?

Let's overturn my wagon so that I can propel it down a road with myself seated inside. According to Einstein, I can validly regard myself as stationary, and that if I press a stick against the wheel of my wagon, this generates a gravity field that retards the motion of

the entire universe rushing past me.

For that matter, forget about my applying the brakes. Consider this. If I propel my wagon down the road, eventually friction will drag it to a stop. Or, alternatively, the entire universe moving past my stationary wagon is dragged to a halt simply by rubbing against the tires of my little wagon.

Sure. Entirely reasonable.

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Back to our occupant of the train. Suppose he also constructs an exact duplicate of his train in miniature, and places it on a miniature track within his own train, and sets this toy train in motion. Is he likely to allow that the toy train can equally be regarded as stationary, and his own larger train truly in motion, and that the application of the toy train's brakes somehow causes the larger train to gradually coast to a halt?

Come on. How can anyone in their right mind grant an equal reality to the train being motionless and the rest of the universe being in motion, when such granting must allow that a relativity small force applied to a simple mechanism like a brake can decelerate the entire universe? This is an absurd notion, and seems entirely unreasonable. And yet the people upholding this view scoff at the seemingly equally absurd notion that the entire universe revolves around the Earth.

Imagine a billion planets spread throughout the universe, each with millions of automobiles moving around upon the planet on their own individual courses, randomly braking and maneuvering about. This would mean that billons upon billions of gravitational fields would constantly be generated and then die as soon as the brakes were let off, billions upon billions of gravitational fields constantly popping into and out of existence, billions upon billions of gravity fields, each powerful enough to affect the entire universe.

That's the logical conclusion from Einstein's ideas.

And yet I'm the crackpot for even merely considering the

possibility that the Earth may be motionless at the center of the universe.

Ha.

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I am not putting words into Einstein's mouth, or misinterpreting his idea. He says it explicitly at the end of Chapter Twenty: a train applying its brakes generates a gravity field that stops the entire universe moving past the train. That is relativity for you, folks.

Once again, here are Einstein's exact words, from Chapter Twenty of *Relativity*, (The Equality of Inertial and Gravitational Mass as an Argument for the General Postulate of Relativity):

"My body of reference (the carriage) remains permanently at rest. With reference to it, however, there exists (during the period of application of the brakes) a gravitational field which is directed forwards and which is variable with respect to time. Under the influence of this field, the embankment together with the earth moves non-uniformly in such a manner that their original velocity in the backwards direction is continuously reduced."

Sure, you may object that he says that the gravity field reduces the velocity of the Earth and the embankment, and says nothing about the entire universe. But the entire universe is inherent in that, since obviously the relation of the train to the entire universe is changed, not just the relation of the train to the embankment and the Earth.

You could also object that he never says that the application of the brakes generates the gravitational field. He merely says that the field exists during the application of the brakes. So according to this objection, we have a gravitational field which is present the instant the brakes are pressed, and which vanishes the instant the brakes are released. And this happens every single time the brakes are applied. But this is merely a coincidence. The application of the brakes doesn't cause the gravitational field.

Yeah, right.

You could further object that by "gravity field" he means "acceleration," since gravity and acceleration are equivalent, according to relativity. But this does nothing to dilute my argument. Whether the application of the brakes produces a gravity field or an acceleration (deceleration), the entire universe is affected by the application of the brakes.

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Which brings me to another point. Can you imagine how much force it would require to decelerate just the Earth, let alone the entire universe? Force equals mass times acceleration, according to Newton. It seems to me that if the entire universe (or just the Earth, if you like) is moving past the train, say at 70 miles per hour, the amount of force needed to decelerate the mass of just the Earth, let alone the mass of the entire universe, would break the braking mechanism of the train.

Consider this. If I'm in my car on the highway, and the Earth and all those other cars on the highway are moving past me at 70 miles per hour, if I were to apply the brakes, I should think that the necessary force would wear my brake pads to atoms and snap the braking system to pieces long before they managed to decelerate the Earth so that I could safely get out of my car.

But apparently, somehow, the mere act of tapping my brakes with a tiny bit of force from my little old feet inexplicably generates a momentary gravity field powerful enough to skid the entire universe to a standstill.

Ya gotta love relativity.

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But for the sake of argument, let's ignore the absurdity of Einstein's assertion. Let's allow the train observer to say that when he applies the train's brakes, a gravitational field is generated which retards the motion of the universe rather than the carriage.

Everything is fine in such a case, yes? Relativity survives unharmed.

Wrong!

And here's why:

With the above allowance in mind, let's backtrack to special relativity and the famous Twins Paradox. The standard spiel is that there's really no disagreement on which twin actually ages, because the twin on the rocket experiences acceleration midway through his trip when he turns around and heads back toward Earth, thereby breaking the time-dilation symmetry and allowing us to determine which twin truly aged.

So basically, the Twins Paradox is resolved by saying that the conundrum belongs to the realm of general relativity rather than special relativity, because acceleration is involved.

Okay, fair enough at that point. But the situation is *left* at that point. No one pursues the Twins Paradox into general relativity. They've swept the dirt out of special relativity, so everything is fine and dandy, case closed.

But not so fast. The standard spiel has put the Twins Paradox into general relativity, so we are obligated to follow it there before proclaiming that the paradox has been resolved and special relativity is saved.

When we do, we find that the observer inside the rocket, in keeping with Chapter Twenty of *Relativity*, is "compelled by nobody to refer this jerk to a 'real' acceleration (retardation) of the carriage." Or rocket, in the case of the Twins Paradox. He can with equal justification say that the rest of the universe experiences a gravitational force when he turns the steering wheel of his rocket, which causes the entire universe to swing around and head back toward his rocket. Or, in more detail, somehow the turning of the rocket's steering wheel (yes, rockets have steering wheels, didn't you know?) generates a gravitational field that causes the entire universe to rotate 180 degrees around the rocket and begin moving toward rather than away from the rocket.

Keep in mind: I'm not the one being absurd or facetious here!

The absurdity is Einstein's. I've simply applied Einstein's statement at the end of Chapter Twenty of *Relativity* to a rocket rather than a train carriage. I have added nothing here! I am not misquoting, misinterpreting, misunderstanding or misusing Einstein's ideas! Here again for convenience is Einstein's exact statement:

"My body of reference (the carriage) remains permanently at rest. With reference to it, however, there exists (during the period of application of the brakes) a gravitational field which is directed forwards and which is variable with respect to time. Under the influence of this field, the embankment together with the earth moves non-uniformly in such a manner that their original velocity in the backwards direction is continuously reduced."

This is how Einstein saves general relativity from an ignominious end at its very inception!

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So, anyway, back to my point: the standard spiel of the Twins Paradox is to appeal to acceleration on the part of the rocket which breaks the symmetry. But upon closer examination, general relativity negates that appeal by stating that the rocket observer is justified in claiming that he doesn't experience acceleration, but rather that rest of the universe experiences a gravitational force. Which puts us back to square one with the problem of the Twins Paradox.

So if we let stand Einstein's statement in Chapter Twenty, then the resolution of the Twins Paradox is no resolution at all. The fact of the matter is that the Twins Paradox is irresolvable without violating both special relativity (as I show in my book *Death to Einstein!*) and general relativity.

Put yet another way, since I like to say the same thing multiple times in multiple ways: the standard spiel says that the Twin Paradox is resolved because the rocket experiences acceleration midway through its trip. But the rocket's acceleration is from the viewpoint of the twin on Earth. General relativity says that the

rocket's observer is equally justified in his claim that he's stationary the entire trip. So upon what, exactly, does the standard resolution of the Twins Paradox base its decision to choose the Earth twin's viewpoint as the correct one regarding the state of the rocket's non-uniform motion? It's a completely arbitrary choice.

Sure, it's not arbitrary solely from the viewpoint of special relativity (at least it's not if we completely ignore what I pointed out in *Death to Einstein!*). But the mere act of involving acceleration puts the situation in the realm of general relativity, and when we examine it from that viewpoint, both observers can with equal justification view themselves as being at rest despite any relative acceleration, which leaves the Twins Paradox alive and kicking, because the choice of regarding the rocket as accelerating is completely arbitrary, based upon nothing other than the fact that there is an absolute, physical fact as to which twin has aged more upon their reunion. And relativity, as I hope I've shown, has in fact no way of determining which one has aged more, other than by making an arbitrary choice to align theory with reality.

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Now, a further objection might be raised: when the rocket steering wheel is turned and the gravity field is generated, the entire universe, including the stay-at-home twin, experiences a burst of time dilation due to the gravity field thus generated, and thus the stay-at-home twin ages more rapidly due to a faster-ticking clock.

The problem with this objection is that the twin on the rocket is also subjected to the same gravity field generated when the wheel is turned. That pesky 'jerk,' remember? What causes this jerk if it is not the gravitational field being generated? So at that point the rocket's clock will be experiencing the same rate of time dilation as the rest of the universe, meaning that while either the Earth or the rocket are turning around (depending upon whose viewpoint you adopt), both twins are aging at the same rate. Which leads us to logically conclude that the only reason the stay-at-home twin might

age more rapidly is because he's dwelling in Earth's gravitational field the entire time, and thus his clock is constantly running faster than the rocket's clock. (Wait a minute. Did I just say that clocks run *faster* in a gravity field? Either that, or the stay-at-home twin actually ages more slowly, in opposition to the standard prediction).

In the end, we see that the rocket trip—the other twin traveling at close to the speed of light—actually has nothing at all to do with the Twins Paradox. It's irrelevant to determining which twin grows older.

In other words, the preceding objection leads logically to the following conclusion. Suppose both twins originated on a space station that is in the absolute middle of nowhere, space-wise, so that the space station is free from any gravitational influence whatsoever. The rocket's twin then takes his journey and returns. In such a case, both twins will be the same biological age both before and after the rocket trip, since both twins are subjected to identical gravitational forces. So the only sort of time dilation which will have any measurable effect on anything is time dilation due to "immersion" within a gravity field.

The implication is that motion, either uniform or non-uniform, has no effect on physical processes. If we have two synchronized clocks, biological or not, and they're still synchronized after one takes a round trip near light speed, then obviously neither clock was in any way affected by the trip—as long as they are both subjected to identical gravitational fields, i.e. one of them was not located on a planet or a star for the duration of the trip.

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So to summarize: at the very beginning of his presentation of general relativity, Einstein states, "At all events it is clear that the Galilean law does not hold with respect to the non-uniformly moving carriage. Because of this, we feel compelled at the present juncture to grant a kind of absolute physical reality to non-uniform motion, in opposition to the general principle of relativity. But in

what follows we shall soon see that this conclusion cannot be maintained."

In other words, if it can be shown that the above conclusion *can* be maintained, then general relativity *cannot* be maintained.

And after several chapters, the reason he gives that the conclusion cannot be maintained is that the carriage can justifiably claim that the Earth and the embankment, rather than the carriage, experience the force.

So we are free to either reject general relativity based on the absurdity of his reasoning for maintaining the conclusion—or we can accept his conclusion, which consequently forces us to recognize an irresolvable violation of special relativity that proves the existence of absolute motion, thereby demolishing relativity as a whole.

Like I said, ya gotta love relativity.

GENERAL RELATIVITY BEGINS ITS DEATH!

I'm going to go back to the subject of the last chapter, from a different direction.

In discussing the Twins Paradox, Banesh Hoffmann, in his book *Relativity and Its Roots*, says"

"Actually, the twins cannot legitimately be treated reciprocally, as in the preceding paragraph. There is a crucial difference between them that is best seen by making the reversal of direction of the spaceship after one year an abrupt one—say, one taking 30 seconds. Then the traveler would experience a deceleration force of about a million times the pull of earth's gravity, and he would at once be squashed flat against the wall of his spaceship. But when we look at the situation relative to the traveling twin with the stay-at-home twin now the apparent traveler, the stay-at-home twin would nonetheless experience no such lethal force, while the traveler still would."

But there's a problem with this. The instant acceleration or deceleration is brought into the picture, the immediate thought should be, "Okay, at this point, I have to look at it from the perspective of general relativity."

So you should then immediately go to the paragraph in *Relativity* where Einstein says:

""My body of reference (the carriage) remains permanently at rest. With reference to it, however, there exists (during the period of application of the brakes) a gravitational field which is directed forwards and which is variable with respect to time. Under the

influence of this field, the embankment together with the earth moves non-uniformly in such a manner that their original velocity in the backwards direction is continuously reduced."

Once you do this, the contention that the twins cannot be treated reciprocally is refuted. They *can* be treated reciprocally. The twin in the rocket simply claims that a gravitational field, whose existence coincides with the rocket twin turning the rocket's steering wheel, causes the entire universe to swing around 180 degrees so that the rocket is once again facing the Earth.

And both the rocket twin and the rest of the universe experience this gravitational field, since according to Einstein, "Under the influence of this field, the embankment together with the earth moves non-uniformly..." Meaning that the gravitational field apparently called into existence by the turning of the rocket's steering wheel (or the firing of its maneuvering rockets, however you want to look at it) acts upon the Earth, and by extension, the entire universe. And obviously the same gravitational field acts upon the rocket twin as well, since according to both Einstein and Hoffmann, the rocket twin feels a 'jerk.' There's no getting rid of that pesky 'jerk.'

So looking at it from the rocket twin's viewpoint, both he and the Earth twin are subjected to the same gravitational force during the turn-around, in conflict with Hoffmann's assertion that "when we look at the situation relative to the traveling twin with the stay-at-home twin now the apparent traveler, the stay-at-home twin would nonetheless experience no such lethal force, while the traveler still would." Bringing general relativity into the situation, as is proper, shows that they're both subjected to the same force.

How can it be said that the stay-at-home twin, considered as the one traveling, experiences no force? Einstein clearly, explicitly says that the stay-at-home twin, considered as the one traveling, ***does*** experience a force. Let me repeat Einstein's exact words yet again: "**Under the influence of this field**, the embankment together

with the earth moves non-uniformly in such a manner that their original velocity in the backwards direction is continuously reduced." Again, repeat after me: from either the viewpoint of the train or the rocket, "**under the influence of this field**, the embankment together with the earth moves non-uniformly in such a manner that their original velocity in the backwards direction is continuously reduced."

When the rocket twin is considered at rest and he turns the rocket's steering wheel, a gravitational field comes into existence that acts upon the entire universe, rotating it around the rocket and causing the Earth and consequently the entire universe to begin moving past the rocket.

This is relativity! I am not misunderstanding this or misquoting anything! Mathematics are not necessary! This is simply the logical application of Einstein's own ideas.

Here is the logical analytical path, or a flowchart, that must be followed, not according to me, but according to relativity's own "rules":

Special relativity claims that time dilation is reciprocal. Okay. So far so good. Bring in the twins and the rocket. Time dilation should be reciprocal, and each twin should be aging faster than the other. But it's not, relativists claim, because acceleration is involved. Okay. Must switch to general relativity then, since special relativity only applies to uniform motion. So far so good. Bring in general relativity. In doing so, we immediately find that the twin situation is still reciprocal, despite earlier protestations that situation wasn't reciprocal due to acceleration, because according to either observer, the other observer experiences acceleration.

The problem is that most scientists apparently don't follow this logical pathway, as they should.

Now, someone will probably object that I'm falling into a trap that Einstein warned about just a few paragraphs earlier:

"Before proceeding farther, however, I must warn the reader

against a misconception suggested by these considerations. A gravitational field exists for the man in the chest, despite the fact that there was no such field for the coordinate system first chosen. Now we might easily suppose that the existence of a gravitational field is always only an *apparent* one."

The gist is that the gravitational field experienced by the rocket (the one that rotates the entire universe around the rocket) only exists from the viewpoint of the rocket. It's only an *apparent* field, since it only exists for the twin in the rocket. This is the reason why he's the only one who feels the jerk.

But Einstein's warning was against supposing that this means that *all* gravitational fields are merely apparent. That's not what I'm doing here, so I'm not falling into the trap Einstein is warning about.

So after alerting you that I'm aware of that objection, let me finish. But keep that objection in mind, because I'm going to use it against itself.

Bringing general relativity into the Twins Paradox as we must since acceleration is involved, we find that the situation is indeed reciprocal, despite the claim that it wasn't, because the rocket twin is "compelled by nobody to refer this jerk to a 'real' acceleration." He is free to attribute the acceleration he feels in turning around to a gravitational field rotating the universe around his rocket.

But this is only an *apparent* gravitational field, not a real one, in light of Einstein's warning about the trap, as outlined above. The rocket twin is free to interpret the acceleration as a gravitational field acting upon the entire universe…but it isn't really. It's only an *apparent* field, existing only for the twin in the rocket.

You might think this means that *all* gravitational fields are merely apparent if you choose the correct reference frame (Einstein's trap). But it doesn't mean that. Because only "those of quite special form" are apparent. For example, you can't choose a reference frame from which the Earth's gravity vanishes (in which case it would be only an apparent gravitational field).

So how do we know which gravitational fields are merely apparent? Apparently (no pun intended) the only apparent (i.e. not real) gravitational fields are those that exist solely from the viewpoint of an observer that is actually in motion, but is pretending that he isn't.

And thus we're once again handed a way of determining absolute motion.

Back to Einstein's warning against the trap of regarding all gravitational fields as apparent: what is the chest Einstein mentions, and what was the coordinate system first chosen?

The coordinate system first chosen was a location in space so far removed from any gravitational field that it satisfies the requirements for Galilean relativity. The chest is basically just a rocket under constant acceleration relative to this first hypothetical Galilean frame. The man in the chest, says Einstein, is experiencing what he believes to be a gravitational field, since he regards himself as being at rest.

Einstein's point is that the man in the chest *thinks* he's experiencing gravity, but there's no gravitational source in the Galilean frame.

And this, I think, is one of the fundamental errors of general relativity. Einstein establishes that gravitational mass and inertial mass are equivalent, if not one and the same. And so he says that acceleration and gravitation can be treated equivalently.

But, Einstein warns, obviously gravitation and acceleration are not the same, because you can choose frames where the apparent gravitational field can be made to vanish entirely, which will show that it was really only ordinary acceleration. But you can never choose frames where certain types of gravitational fields will vanish entirely, and these are actual gravitational fields rather than apparent ones.

Of course, that's not what Einstein explicitly says, but it's the actual meaning of what he says, when he warns not to fall into the

trap of thinking that *all* gravitational fields are merely apparent.

Basically, it is doublespeak. Gravitation and acceleration are equivalent, so they can be treated as if they're the same, but they're not really the same, because they're two different things.

And it's obvious that they're two different things. If I push or pull an object at a constantly increasing rate, obviously it is not gravity acting upon the object. Yet Einstein says we should treat the two as if they're the same. But, he warns, only up to the point where we're unable to treat them as if they're the same. We secretly know which objects are really moving and which really aren't, but everyone is free to pretend that we don't really know which are really moving. It's absurd!

So what it boils down to is that, when you drag the twins into general relativity, the Twins Paradox isn't really a paradox because it's never in doubt which twin is actually traveling. And how do we know which twin is actually traveling? Because there are unequal reference frames, in direct violation of relativity (some contain actual gravity, others merely apparent gravity)! Because relativity tells us it's okay to pretend that completely different forces are actually the same force. Certain types of acceleration may be due to gravity, but not all types of acceleration are due to gravity, but we can pretend that all types of acceleration are due to gravity, as long as doing so doesn't lead to physical impossibilities, such as two twins each being younger than the other. Thus we can pretend that the each twin is aging more slowly than the other, until we try to reunite them, whereupon we have to drop the pretense that all frames are equal.

In other words, Einstein's version of relativity (as opposed to classical Galilean relativity) appears to be a valid principle, until you push it too far and discover that it's actually invalid. **Just as certain gravitational fields are merely *apparent,* relativity itself is merely apparent.**

SPACETIME CURVATURE FLATLINES!

According to General Relativity, gravity is caused by a curvature of spacetime. Earth's mass distorts the spacetime surrounding it, causing objects to accelerate toward Earth. So if I'm holding an object in my hand and let it go, the curvature of spacetime between the object and the Earth causes the object to accelerate downward.

We're all familiar with (I assume) the picture of Earth sitting at the center of a dip in a tablecloth or a grid or what have you, which is often used to illustrate how Earth warps spacetime.

Now, I have issues with this view of gravity, since some sort of force is still needed to send an object moving "down" the curvature toward Earth. Otherwise, if I let something go, as described previously, why does the object not just "sit" at a point on the curvature? What makes it go "rolling" down the curvature toward Earth, which we see as gravity? It seems to me that the standard relativistic explanation is no explanation at all, because you still need some sort of force to set the object "rolling" down the curvature.

Now think of this. The Earth is moving through space (allegedly). So theoretically, someone could say that that answers my question about the curvature. Earth moves toward the object I've just released, mimicking gravity. But again, this explanation is obviously flawed, since it then negates the need for spacetime curvature to explain gravity. Also, it only works for objects that are in "front" of the Earth, in its path. Objects "behind" Earth, when released, would recede from Earth, or rather Earth would recede from the object, giving the appearance of anti-gravity. Also, this attempted explanation doesn't work because the object in question

already shares the (alleged) motion of the Earth due to classical, Newtonian physics. So there's not the slightest hope of an explanation here. Absent gravity, if I let go of an object, it will continue in motion with the Earth, appearing to hover next to my hand. Which is precisely my point with the spacetime curvature explanation as well. What makes the object accelerate "down" the curvature?

Anyway.

In General Relativity, the cause of gravity is attributed solely to spacetime curvature. Let's ignore my question as to what causes an object to accelerate down the mass-induced curvature, and just accept that curvature somehow translates to acceleration, which we view as gravity, and that spacetime around Earth is curved.

And here is where I've been going with all the above:

Earth is allegedly in motion. This means, obviously, that the spacetime "dimple" in which the Earth sits is moving through spacetime as well. What this means is that the edge of the dimple in the direction of the Earth's motion is sort of "bowing in," for want of a better description, while the edge of the dimple "behind" Earth is "springing back" into its standard position.

In other words, if gravity is due to curvature of spacetime, and Earth is in motion, then, depending upon whether an object is fore or aft of the direction of Earth's travel, the spacetime curvature between that object and Earth is warping in a different "direction." On one side of the Earth, spacetime is warping, while on the other side, spacetime is unwarping.

See, the spacetime curvature around Earth is not static. For an object to the fore of Earth, the spacetime curvature between it and the Earth is warping "downward," while for an object to the aft of Earth, the spacetime curvature between it and the Earth is warping "upward."

As an analogy, think of two buoys in the water, with a wave moving past. The buoys will not bob up and down in tandem. First,

one buoy will bob upward as it encounters the wave. When it reaches the crest, it will begin bobbing back down, even as the second buoy begins bobbing upward.

So at any given time, the spacetime curvature between objects ahead of Earth and behind it is not equivalent. To the fore of Earth, the curvature is "bobbing upward," while to the aft of Earth, the curvature is "bobbing downward." Or vice versa.

In a static model with a motionless Earth, the curvature would be equivalent all around Earth. But in a dynamic model, with a moving Earth, the curvature is *not* equivalent all around Earth. And it's hard to believe that this lack of equivalence in curvature would not have some sort of noticeable, measurable effect on the force of gravity.

(I know, I know. Gravity is not a force, according to relativity, but rather a curvature).

What I take this to mean is that the force of gravity acting on an object to the aft of Earth will be weaker than the force of gravity on an object to the fore of Earth.

Of course, the Earth is allegedly rotating, which complicates the picture. But not beyond hope of reducing the "noise" to detect the difference due to Earth's motion.

But I predict that a satellite in a stationary position in the direction of Earth's alleged motion, not rotating with the Earth but traveling at the same speed, such that it maintains a constant distance from Earth while remaining within Earth's path through space, will measure a slightly stronger force of gravity than will a satellite in a similar position trailing Earth through space.

Here is a more refined prediction: at any given location along the equator, the force of gravity will be strongest at local dawn, and weakest at local sunset. Or vice versa, depending upon whether an increasing warping of spacetime corresponds to increasing gravity or decreasing gravity.

Of course, this increasing or decreasing warping could manifest

as some property of gravity other than strength or weakness. If what we experience as the "attractive force" of gravity is curvature or warpage, then a dynamically-changing warpage could be some other gravitic property that we haven't yet discovered.

Anyway, moving on.

The view or model that I've put forth in the preceding is basically this: we have a spacetime Point A that lies ahead of Earth in its orbit. As Earth approaches this Point A, A will begin warping, curving. Point A's warpage will increase until it reaches a maximum when it is aligned with the center of the Earth. Once Earth's center begins moving past point A, point A's warpage will begin decreasing, until it reaches its "default" warpage, i.e. it will return to the state it was in before Earth's approach.

Now, the relativist will object that I'm taking an absolutist view of spacetime. The real model should be this: the spacetime Point A, rather than being embedded in an absolute space as I've described, is actually just a point which maintains a constant distance from Earth. Thus, all the way around Earth, we can imagine a variety of such points, whose curvature or warpage depends only upon their distance from the center of the Earth, which remains constant.

In this relativist view, if we adopt the perspective of an outside observer, say one attached to the Sun, we will see Earth moving through space enshrouded by a "cloud" of spacetime points which maintain a constant position relative to the Earth.

In other words, in my absolutist view, Point A is embedded in an absolute space, with a constantly changing position relative to the moving Earth, while in the relativist's view, Point A moves along with the Earth, maintaining a constant position relative to the Earth.

In the relativist's model, spacetime around the Earth will not be dynamic as I've described. It will be static. The relativist simply says that at any given distance from the Earth (or any massive object), each point in spacetime will have a slightly different degree of curvature, but the degree of curvature does not change, nor does the

position of the spacetime points.

In my absolutist model, Earth (or any massive object) is moving against a backdrop of spacetime points, and the curvature of these points changes as Earth (or any massive object) moves past.

So in the absolutist model, the position of spacetime points can change with respect to massive objects, while in the relativist model, the position of spacetime points *cannot* change with respect to massive objects. But both models agree that spacetime points can have differing degrees of curvature.

In effect, the absolutist model holds that gravity (spacetime curvature) is absolute, while the relativist model holds that gravity (spacetime curvature) is relative. In the latter model, spacetime curvature is relative to whatever massive object is under consideration.

These are the only two options I can see. Spacetime curvature is either static and carried along with an object and is not connected to anything external, or it is a dynamic effect in an elastic medium. Put another way, we can imagine a bunch of boats moving about on a lake, causing ripples in that lake as they move; or we can imagine a bunch of boats, each of which is surrounded by its own ripples, but there is no water and there is no lake.

I urge any reader to think long and hard about this, because I may not have explained it well, but I know I'm right. Try to picture what I'm seeing. There shouldn't really be anything controversial here.

But if we look at the usual descriptions or illustrations of curved spacetime as put forth by the relativists themselves, it is apparent that they're looking at spacetime curvature from the absolutist viewpoint. In which case, there MUST be some difference in gravity depending upon whether gravity is measured in the direction of Earth's motion, or opposite the direction of motion.

Of course, the relativist will say that there *shouldn't* be a difference, since that would mean that we've detected absolute

motion. In which case, they will be forced to abandon the standard illustrations of spacetime curvature, such as the oft-used illustration of Earth rolling across a flat, grid-lined surface, with the grid lines curving downward as Earth rolls across. You know the one I mean.

Adopting a relativist view of spacetime curvature also forces us to abandon the assertion that spacetime curvature is dynamic, or changing. Think about it. If the spacetime Point A remains at a constant distance from Earth, and curvature equals gravity, then in an absolutist model, the curvature of Point A cannot change, for if it did so, the gravity at a specific distance from Earth would be constantly increasing, and would soon reach infinity. In other words, a relativist view of spacetime curvature does not work. The only way a curved view of spacetime is feasible is if we allow that Point A changes its position relative to Earth, and its curvature either decreases or increases depending upon whether its distance from Earth is increasing or decreasing. The only way for gravity to stay the same at all points is if one point receives a certain degree of curvature, then moves aside and another takes its vacated position, receiving the same amount of curvature.

There must be a continual cycling of spacetime points, or else the strength of gravity at any given location will quickly spiral beyond all physical possibility.

So the standard relativistic explanation of gravity as spacetime curvature demands that we adopt my absolutist model, which leads us to the detection of absolute motion, which leads us to the destruction of relativity (special relativity, at least).

So let's say that we perform experiments and find that there is no difference in gravity when measured from the direction of Earth's motion and the opposite direction. What would such lack of difference mean? It would mean that relativity is not a correct theory. And if such a difference *were* detected, it would mean that special relativity at least must be rejected, since absolute motion has

been detected.

Either way, relativity is once again doomed.

OK. FORGET the part above about gravity constantly increasing and spiraling to infinity. I see my error there now. But this is exploratory writing, after all. I'm trying to clarify my thoughts here, and follow them to where they're leading. But I'm leaving the error in case maybe later I decide I was right in the first place.

But - to continue - the spacetime curvature at Point A or any other point still cannot remain static. The curvature has to be able to change. For instance, let's say we have a Mass B sitting at a distance from Earth, stationary relative to Earth. Ignoring the principle that the gravity of every object is felt throughout the entire universe, there is a point where Earth's gravity is essentially negligible and Mass B will basically be in a non-gravitating, "ground" state where Earth has no influence on Mass B. For ease and the sake of this argument, we're also pretending that all other nearby masses aren't affecting Mass B. Now, unless we're subscribing to the absolutist view that all spacetime points are embedded in an absolute sort of "gravitational" space, there should be no reason that Mass B will be gravitationally affected by the approach of Earth. For gravitic spaces cannot be contiguous in a relativist view of gravity, because if Earth's Point A is somehow connected with a similar Point A of Mass B, then gravitational space once again becomes absolute. So the curvature of one mass's spacetime should not be felt by another mass.

Therefore we're forced back to my absolutist model spacetime.

Back to my Mass B. If Earth approaches Mass B and gravity works, which it obviously does, then common sense says that the Point A associated with Mass B, provided it is between Earth and Mass B, will feel the effects of Earth's gravity before Mass B does. In other words, the curvature of Mass B's own Point A will change. And since Earth's own Point A also lies between Earth and Mass B, then Mass B's Point A is actually be responding to the curvature of

spacetime at Point A, rather than responding directly to the mass of Earth. Which will confirm that the two seemingly relative spacetimes are actually part of one absolute spacetime, which is the medium for gravity.

From this it follows that Earth's own Point A, rather than remaining static, must constantly be changing due to the approach of Earth. Which itself means that Point A cannot be stationary relative to Earth, but rather is behaving exactly as I outlined in my absolutist model, namely that all points are stationary and embedded in a "gravitic" spacetime, and the curvature of each point changes according the approach or recession of any given mass.

Why do I say that this proves that Point A must be constantly changing due to the approach of Earth? Because since curvature, not just mass, obviously must be able to curve spacetime, and the outer edge of Earth's curvature first affects the outer edge of the curvature around Mass B, this can only mean that the curvature caused by Earth is advancing ahead of the Earth, curving spacetime ahead of Earth. This means that Point A, if it is on the lip of Earth's curvature, will "drag down" an uncurved point immediately in front of it, while Point A will be "dragged further down" by a point immediately behind it and closer to Earth. Ultimately this means that if spacetime curvature truly is seen by us as gravity, then it must work according to my absolutist model.

In other words, the fact that two masses can interact gravitationally proves that gravitational space must be absolute in the manner I've described. Masses can't carry their own curvature around with them in the relativist fashion. If they did, gravity would not work. And since gravity obviously works, it must be absolute the way I've described.

I guess it's a bit like a wave in water. The actual wave is an abstraction; it's a sort of optical illusion. In reality, all that exists are individual water molecules moving up and down or forward and backward, within a limited range. A wave does not consist of a mass

of water molecules being swept along for enormous distances. An ocean wave itself may travel hundreds or thousands of miles, but the individual water molecules comprising it merely briefly bob up and down or back and forth, within the space of a few inches or feet.

The relativist view of gravity pretends that the abstract wave in gravitational space is the reality, when in fact the opposite is true: a portion of gravitational space merely does the equivalent of bobbing up and down as a mass passes. Or, if the mass stays in one place, that portion of spacetime stays "depressed." Once the mass moves away, that portion of spacetime "springs back" to its normal position.

Okay. That's my initial writing on this subject. And it's another disproof of relativity. Experiments will either show that gravity is different depending upon whether it's measured along the direction, or opposite direction, of Earth's motion, thereby detecting absolute motion and disproving special relativity. Or experiments will show no difference, thereby proving that gravity cannot work as Einstein theorized, thereby disproving general relativity.

Or…experiments will show no difference, providing support for the view that Earth is motionless at the center of the universe.

Either way, relativity is doomed.

Someone may still object that the degree of spacetime curvature all around the Earth is still the same, even if spacetime curvature works as in my absolutist model. The curvature will be the same regardless of whether one adopts an absolutist or a relativist model. This is true. But such an objection misses one of my main points: in the absolutist model, there's a dynamic other than degree of curvature at work. In the absolutist model, there is an actual absolute Point A (many more than one point, of course) past which Earth is moving.* This Point A will gradually increase in curvature as Earth approaches, reaching a maximum when it coincides with Earth's center. Then it will begin decreasing in curvature as Earth moves away from it. In essence, on one side of the Earth, we will

find a stream of points increasing in curvature as they move toward Earth's center, or at least toward a central plane perpendicular to the line of Earth's motion, and then decreasing in curvature once they pass the center. There's an asymmetry which should surely be manifesting as some detectable physical phenomenon.

* It's important to note that this point is not some sort of particle; it is not accelerating as if drawn toward Earth by gravity; it is gravity itself, or curvature of spacetime. Let's not confuse the two. I'm not postulating a new particle here. Strictly speaking, this wouldn't even actually be a point; it would be a relatively large region of spacetime encircling the Earth. You know, like any point at a particular distance from the Earth (which distance would constantly be changing). The curvature of spacetime in this entire region would be changing mostly identically as we followed Earth's journey through space.

Of course, all this brings up something for further consideration: people and things that are parallel to Earth's direction of motion, or its opposite, will be passing through warping space that is descending on them from above, or receding upward from them, depending upon which side of the planet they're on, while people and things that are perpendicular to the direction of motion, or its opposite, will be passing through warping space that is approaching or receding from the sides. So in addition to whatever sort of effects might arise from approaching or receding warpages, we also must consider from which and into which direction the warpages are approaching or receding. Simply put, in the absolutist model, the warpages would not all converge upon the center of the Earth, or whatever mass is being considered. This should be a clue that perhaps we aren't looking for variations in the strength or weakness of gravity in a particular direction, but rather some other property of gravity.

What other properties of gravity are there?

AN INTERNET READER
RESPONDS TO THE PREVIOUS CHAPTER

Critic: "For a "thought experiment," consider a ball at the end of a string that you're holding and that you're twirling overhead. Now, you can twirl the ball at a constant speed, yet it is still accelerating due to the constantly changing direction produced by the force along the string. What do you observe? Well, it's traveling along a curve. It's velocity is constant yet it is accelerating AND it's experiencing a force. What happens when you let go of the string — the force and acceleration disappear and the ball travels off in a straight line at a constant velocity. Sound familiar?

Well, now pretend you're the ball — you measure your own movement and see you're moving at a constant velocity. Yet you feel this force tugging on you and you MUST conclude that somehow you are accelerating. Well, the only situation known where velocity can remain constant and yet the object still experiences force and acceleration is when the object is moving along a curve. Therefore, you MUST conclude that one way or another your movement through spacetime is along a curve — hence the theory of a "curvature" of spacetime."

Me: Actually, there *isn't* only one situation known "where velocity can remain constant and yet the object still experiences force and acceleration." There's the one you mentioned, and then there's gravity. I DON'T have to conclude that gravity is movement along a curve. We are not forced to conclude that gravity is movement along a curve simply because we have an explanation for

centrifugal or centripetal force but lack one for gravity. In other words, we DON'T have to explain gravity in terms of curvature simply because curvature is the only readily available explanation. Movement along a curvature explains centrifugal force, but we're not compelled by anything (other than a desire to unify forces) to apply that same explanation to gravity. We are not forced to say that if two things that are different in many respects are also similar in many respects, they must therefore have the same underlying cause. That's similar to classifying humans and plants as the same thing because they both have cells and reproduce. They're both living things, therefore a man is a plant.

The obvious response to this is, "Of course a man is not a plant! But in the same way that both a man and a plant can trace their origin to the same single-celled organism billions of years ago when life began, so can centripetal force and gravity trace their origin to motion along curvature."

But it's not the same situation. What would it do to our belief that man and plants have their origin in the same cell billions of years ago if scientists added the caveat, "But our theory of evolution is incorrect." You could not then back up your assertion that plants and man evolved from the same source cell.

Well, scientists admit that relativity is not a correct theory. I know, now I'm being crazy again, as if I ever stopped, right? But scientists do admit that relativity is incorrect. They state it outright, and they admit it implicitly. They admit it implicitly when they search for a Grand Unified Theory. And they admit it explicitly when they state that relativity and quantum mechanics are in conflict. Brian Greene says in *The Elegant Universe*, "As they are currently formulated, general relativity and quantum mechanics *cannot both be right*." (Emphasis by Brian Greene). And it's not just Brian Greene who says this. So relativity is wrong. Or it's right, but needs to be modified so that it doesn't conflict with quantum mechanics. Relativity's authority is drastically weakened by these admissions of

reputable scientists. Ergo, nothing compels us to accept the assertion that gravity is curved spacetime.

Relativists say that relativity may be completely right and quantum mechanics completely wrong, or vice versa, or they both may be partially correct but need modification to unite them. I say that relativity is completely wrong, for the reasons I've been writing about in my books.

And anyway, your example of the ball at the end of a string that I'm twirling — a more accurate analogy with spacetime would be a train rounding the curve of a track, causing the passengers of the train to feel centrifugal force.

Now, it's been experimentally proven that two objects of different mass will fall at the same rate. But if gravity is due to motion along curvature, then let's say I'm on a train. There are two balls side by side on the floor. One is a bowling ball, one is a rubber ball, so that the bowling ball is much more massive than the rubber ball. Now, when the train rounds the curve, are the bowling ball and the rubber ball going to go rolling across the floor toward the wall at the same speed? I don't think so. They're both experiencing the same degree of curvature, and the train's speed it the same for both of them, thus they're receiving the same amount of force. Since the bowling ball is more massive, it will need more force than the rubber ball in order to roll across the floor in tandem with the rubber ball. They experience the same amount of force, and don't move identically. Thus motion along curvature doesn't fit with gravitational effects.

But let's say Einstein was correct, and that gravity is due to spacetime curvature. Then by your own admission (a few paragraphs down from here) you say that the motion of the Earth (or anything else, for that matter) along the curvature causes gravity. It's not just the fact of curvature, but motion along that curvature. Therefore, the strength of gravity must depend upon how fast Earth (or any other object moves along spacetime curvature,

just as the strength of the centripetal force on a train will depend upon how fast the train rounds the curve in the track. If Earth is motionless, we will feel no gravity. If Earth were to slow down a bit, we would feel a bit less gravity.

Do relativists take into account the velocity of a mass when they calculate how much it's curving spacetime? I admit I don't know the answer to this. All I can find is statements about how the Earth's alleged rotation affects the strength of gravity. I find nothing about Earth's speed through space affecting the strength of gravity. But if relativists liken it to centripetal force, then the velocity of motion MUST affect the strength of gravity, just as the strength of centripetal force depends upon how fast the train goes around the curve, or how fast you twirl your string at the end of its ball. I guarantee you the faster I twirl that ball around my hand, the faster it's going to go shooting away when I release it.

So if I accept the notion that spacetime curvature causes gravity, then I assert that the strength of Earth's gravity will vary as its (alleged) velocity through space varies. Somehow, I doubt that anyone will accept this. I don't recall any mention of Earth's velocity in Newton's gravitational equation. That only depended upon mass and distance between two objects. Did Einstein throw a variable for the mass's speed in there when I wasn't looking?

I can think immediately think of one consequence of such a dependence upon velocity: dark matter. Dark matter was postulated because distant stars are moving much faster around their galaxy centers than is expected given the amount of matter estimated to be in those galaxies. Therefore there must be "dark matter" that isn't visible to us, influencing those stars. But if the variation of gravitational strength based on those stars' velocity wasn't taken into account when calculations were made, then the initial expectation regarding how fast those stars should be moving around their galaxies was incorrect.

It doesn't seem to work at first glance. Gravity can't depend

upon motion through space. Therefore your assertion that gravity depends upon Earth's motion along spacetime curvature cannot be correct. Therefore we're back to my point, which is that we still require a force to set us into motion along that curvature, which means that spacetime curvature does not explain gravity.

Critic: "You mentioned the demonstration that everyone uses with the weight in the middle of the blanket, etc, I think that it's very misleading. Like you, someone always wants to know what's making it move along the curvature! Spacetime curvature should be taught as a 'construct' derived from classical physics and that follows basic laws of circular motion."

Me: I agree that it's very misleading. But my argument isn't based upon it. I merely used it as a convenient visual aid, because it's the illustration that even the most reputable scientists use when talking to laymen. I do realize that what's actually curving is not merely three dimensional space, but time as well. The misleading nature of the demonstration has no impact upon the points in the blog entry, any more than the misleading nature of the demonstration has any impact upon the points people like Stephen Hawking and others are making when they use the same demonstration in their books.

Critic: "As to what is "moving" along the "curvature" so as to produce the constant acceleration, and the subsequent force noticed in inertial frames — ask yourself what moves forward relentlessly at an absolutely steady rate 24/7, day in and day out, seven days a week, 52 weeks a year, etc, etc, etc…"

Me: So it's not the curvature itself that produces gravity, but rather motion through curved spacetime? Doesn't this imply that if Earth were not moving, there would be no gravity, even though there would still be spacetime curvature?

According to the logic of your explanation, if I release an object that I've been holding, rather than it remaining in place where I let go of it and moving along with the Earth in keeping with Newton's

law of motion, it will "fall" to the Earth because the Earth is moving through space, bringing its warped spacetime into contact with the object, causing the object to appear to accelerate toward the ground. In other words, you're saying that when I release the object, it will not follow Newton's laws of motion (objects in motion remain in motion), but will instead remain in place while the Earth moves toward it at constant speed, but the object itself will actually accelerate, because as the Earth moves, the object is affected by the increasing spacetime curvature with which it comes into contact. Therefore, if the Earth were not moving, the released object should just hang in the air next to my hand.

Things would be different if Earth was moving through regions of spacetime that were already curved, like a ball rolling up and down differently shaped hills and slopes. But as you said, it's the mass of the Earth that produces the curvature of spacetime, so there's not going to be any variation in curvature in any one spot. For something at a given distance from Earth, there will always be the same degree of curvature.

Basically you are saying what I said in the blog post above, when I talked about the Earth moving toward the released object. You're simply adding the twist that spacetime curvature makes the object accelerate rather than "fall" at a constant rate. Since I already discounted this entire notion in my blog post, you're just restating relativity's explanation, without refuting my explanation of why relativity's explanation can't possibly be right.

If Earth is warping spacetime as it moves, and I along with all other objects on Earth share in that motion, then I and all other objects will continue sharing that motion when we become "independent" objects (in keeping with Newton's laws). Thus, we will always have the same degree of spacetime curvature in our immediate vicinity, so we will not be "moving" along that curvature to produce what we experience as gravity. We will always be "sitting" at the same point along the curvature. The acceleration we recognize

as gravity comes because the curvature increases as the object moves along it. If the curvature is static, or remains the same in the object's vicinity, then it won't accelerate. Relativity's explanation for gravity thus does not work. According to relativity's logic, the only objects which should move along Earth's curvature (gravitate) will be distant objects which are not already associated with the Earth in such a way that they share its motion (i.e. objects which are already in motion relative to the Earth). Thus if I let go of an object, it should remain in the spot where I let go of it rather than "falling" to the Earth. Which was PART of the point of my blog post. The other part was about further implications of spacetime curvature, which I won't restate here.

Further: you should know if you've read my other blog entries that when I ask myself what moves forward relentlessly, etc. etc., my answer will inevitably be: What? The Earth is moving? Prove it.

Relativity says that matter curves spacetime, and gravity is merely movement along that curvature.

Which brings up the problem that if we consider Earth to be at rest, which even Einstein admits is a valid viewpoint, then what is the explanation for gravity in such a frame? If something has to be moving along spacetime curvature in order to feel gravity, then relativity is invalidated because all inertial reference frames are not equally valid. We can tell which reference frames are actually in motion.

I'm not asking these questions to be sarcastic. You bring up some good points that I appreciate because they actually help me to consolidate my own thoughts. You bring up some good points, but they don't seem to stand up to reason, or they at least lead to other problems, which is part of why I believe relativity is incorrect.

EINSTEIN HIMSELF PUTS IN HIS TWO CENTS

In previous chapters, I said that the proper way to resolve the Twins Paradox is to follow it into general relativity where it belongs, which leads to the foolish nonsense of saying that the pressing of the brakes on Einstein's train generates a gravitational field that causes the entire universe to lurch to a halt — today I've been heartened to discover that Einstein himself has already responded to my objections, in a short paper titled *Dialog About Objections Against the Theory of Relativity*. I came up with these ideas all on my own, and it pleases me to find that I'm treading in the footsteps of great minds.

And what does Einstein and his sock-puppet critic have to say? (I say this facetiously. I actually do have great respect for Einstein. You can't argue with the greatness of the theory he came up with, and that it took a brilliant mind to do it. I can acknowledge that, even as I acknowledge that the theory is complete bunk).

He agrees with me that the Twins Paradox can be resolved in terms of general relativity. And it's basically resolved exactly how I said: the gravity field generated by the pressing of the train brakes, or the turning of the rocket's steering wheel, affects the clocks of both frames, thereby resolving the supposed paradox.

Einstein's hypothetical critic then asks what I basically asked: isn't this gravity field merely fictitious?

To which Einstein responds: "..the distinction real - unreal is hardly helpful." He says that it's a real gravitational field as far as the observer in question is concerned, so let's not quibble over

unimportant things like whether something is real or unreal, whether it's gravity or pseudo-gravity.

And my answer to that? What a lame answer, Einstein! Bollocks! I call bull**** on this! I *demand* that we quibble over such terms!

He also talks about "just how little merit there is in calling upon the so-called 'common sense…'"

So: Einstein's considered response is basically that where relativity is concerned, we shouldn't worry about concepts like real or unreal, and we shouldn't appeal to common sense.

He further says that the main difficulty most people have when studying relativity is that "…the connection between the quantities that occur in the equations and the measurable quantities is much more indirect than in terms of the usual theories." Read: relativity is mainly a theory of mathematical abstractions that has little obvious connection to actual physical reality. Just as I've been saying all along.

In this paper Einstein also has some interesting things to say about the universe revolving around the Earth: "For example, strictly speaking one cannot say that the Earth moves in an ellipse around the Sun, because that statement presupposes a coordinate system in which the Sun is at rest, while classical mechanics also allows systems relative to which the Sun rectilinearly and uniformly *moves*…Nobody will use a coordinate system that is at rest relative to the planet Earth, because that would be impractical. However as a *matter of principle* such a theory of relativity is equally valid as any other…For the decision which representation to choose only reasons of efficiency are decisive, not arguments of a principle kind."

In other words, if I choose to say that the Earth is in an absolute frame at the center of the universe, there is little the relativist can muster in the way of scientific principle or empirical evidence to refute me. The best relativity can do is to say, "Hey! Relativity demands that all reference frames are equal, so you can't say there's an absolute frame." Yeah, well, since I don't subscribe to relativity,

then I'll say it, and you can't disprove me. It reminds me of an old Robin Williams joke about cops in England who don't carry guns, so they can only shout, "Stop! Or I'll say stop again!" The relativists, in effect, have no gun with which to force Geocentrists to cease and desist.

In reality, rather than the idiot being the one who proclaims that the Earth is at the center of the universe, the idiot is actually the one who proclaims that no way, no how can the Earth be at the center of the universe.

"But come on," the relativist objects. "You can't possibly believe that the Earth is *really* at the center of the universe, can you?"

What? So *now* the relativist wants to quibble over concepts like real or unreal? Again, in the words of Einstein himself, ""..the distinction real - unreal is hardly helpful."

So as to whether we're *really* at the center of the universe — why are we arguing about such trivial concepts as the reality or unreality of our position in the universe? Surely it can't bother the relativist if one chooses to believe that we absolutely are at the center of the universe.

Gravity or pseudo-gravity, Earth-centered or non-Earth-centered, real or unreal, up or down, left or right, man or woman…these distinctions are hardly helpful, people.

HOW TO BECOME AN ANTI-RELATIVIST AND A GEOCENTRIST — A PRACTICAL GUIDE

Someone might wonder exactly how a person becomes an anti-relativist and a Geocentrist, so I thought I'd trace my path for everyone. SPOILER ALERT: It has absolutely nothing to do with religion!

Back when I was in college, in the early-to-mid 1990's, studying biology, chemistry, physics and all that, I determined to make an in-depth personal study of Einstein and relativity. I began reading any book on relativity that I could get my hands on. At first, I was not against relativity. At the beginning, I didn't set out to disprove it. I really was trying to learn it and embrace it. My attitude was basically neutral, with a strong desire to embrace it with an eye toward maybe eventually becoming an engineer or a theoretical physicist.

But the more I read and reread, the more I studied, the sneaking suspicion that relativity was complete bunk began creeping up on me. By the late 1990's, I was pretty much completely sure it was complete bunk, and was becoming fired with a passion to expose it for what it was.

And to this day, after about twenty years of continually reading new books on it, re-reading old books on it, reading other dissenters, basically giving myself an ongoing, never-ending education on the subject both for and against, my mind just rebels more and more against it. I keep searching for ways I might be misunderstanding it, checking and double-checking myself, but I can't come across anything that sways me from my course.

And then, about six years ago, while debating relativity with a

relativist (OK, we were arguing), I said, "Well, then, you might as well be able to say that the universe revolves around the Earth!"

I meant it as a polemic against how ridiculous relativity was by trying to equate it with the absolutely absurd notion that the universe revolves around the Earth.

But it was one of those moments where you say something, and then blink a couple of times in dead silence as you realize what you just said.

And from then on, I began digging into geocentrism. And found that it's actually not the absurd notion that it seems on the face of it, because it only seems like an absurd notion due to the lifetime that it's been drilled into your head that it's an absurd notion, without any accompanying evidence of precisely *why* it's an absurd notion. The absurdness of the notion is basically taken as self-evidential from the outset, and then the assumed absurdity is reinforced over the course of one's life by repetition on the part of people who are supposedly authorities on the subject.

I began to realize that if one rejects relativity, you almost have to accept Geocentrism. It's like acceptance of Geocentrism is inherent in rejection of relativity. This is because geocentrism is actually a valid reference frame within relativity.

So my current stance is that at the very least, relativity is a premature theory. By this I mean that we're viewing things from within a geocentric frame. And until we are able to view things from outside our geocentric frame, it's premature to generalize relativity (no pun intended) to encompass all reference frames. Relativity *may* be a valid theory, and a geocentric frame is just one among countless others, all equally valid.

But we can't go that far yet.

And we will never be able to. Because no matter what we do as humans, no matter where in the universe we go, we will ALWAYS be able to trace our path back to our beginnings within a geocentric frame.

Thus, unless we someday encounter aliens from another part of the universe and compare notes, we'll never be able to say that "everything is truly relative."

Thus all the supposedly equally valid reference frames of relativity must collapse down into one—the absolute Geocentric frame.

And THAT'S how one person, at least, went from an optimistic desire to thoroughly learn relativity, to believing that we just may literally be at the center of the universe. Although I AM a Christian, I was never and have never been motivated to reject relativity and embrace Geocentrism based upon religion. In fact, when I first began my quest, I was actually an agnostic leaning towards atheism. Seeing evidence of God due to our being at the center of the universe IS a nice side benefit, though. It actually strengthens my belief in God.

I am only hammering the point about my interest in Geocentrism not being motivated by religion because the general belief seems to be that the only people who could possibly be "fooled" by Geocentrism are Creationists and religious wackos. But whether the Earth is or isn't at the center of the universe has absolutely no impact upon whether God does or does not exist, neither in my beliefs nor in actual physical reality. God's existence or non-existence is completely independent of Earth's position in the universe. In my view, God exists whether we are or aren't at the center. And if the Earth is at the center of the universe, that doesn't automatically mean that God had to have put it there. Earth could be at the center even if God didn't exist. Just like Earth could be in the so-called "Goldilocks Zone" due to God or due to natural reasons. Atheists and other "haters" of Geocentrism can't seem to comprehend this. They are unable to separate the issue of God's existence from the issue of whether Earth is or isn't at the center of the universe. Why that is, and why the two issues are indeed separate, are subjects for later writing.

So I am not a case of religion deluding someone into Geocentrism. And I am not a case of some ignorant, uneducated lout who doesn't know any better because he's stupid. I've got more of an education in science than the average person is likely to have, and I have literally been studying relativity (informally, outside of a university, of course) for twenty years.

So you can't write me off as an ignorant, Bible-thumping lackwit spouting nonsense about something about which he knows nothing.

The way I look at it, there are three possibilities:

1. I am stupid and my mind is simply incapable of grasping relativity, which is a correct theory.
2. All the authors of all the textbooks and other books I've read over the course of 20 years have done such a poor job of explaining relativity that they've failed to properly communicate relativity, which is a correct theory. People like Michio Kaku, Stephen Hawking, Paul Davies, Banesh Hoffmann, Albert Einstein, and many other prominent people, and some not so prominent—all those people are very poor teachers and communicators. Either that, or THEY are stupid, and relativity is flawed.
3. Relativity itself is stupid. Relativity is a fundamentally flawed theory.

Now, I have pretty good objective evidence (based on school grades, testimony of people who know me personally, etc) that possibility 1 is false. You'll have to take my word for it since you don't have the objective evidence that I do, but trust me, possibility 1 is just not possible.

Likewise, I sincerely doubt that possibility 2 is possible. Those people aren't stupid, and they are not poor communicators.

That leaves only possibility 3. Relativity is a fundamentally flawed theory.

Now, once I accept that possibility 3 is the only possibility, that acceptance brings up a question. If relativity is a fundamentally flawed theory, why am I the only one that sees that it is fundamentally flawed?

The answer: maybe I'm *not* the only one who sees it. The authors I mentioned earlier are not stupid, after all.

This leads me to believe that they also realize relativity is flawed, but continue to embrace relativity because they have the old familiar attitude, "It may not be perfect, but it's the best theory we have at present."

In fact, I know I'm right on this point. That's why you hear talk of a Final Theory, or The Grand Unified Theory that is the Holy Grail of science. Everyone is looking for it. And *why* do you think they're looking for it? Because either relativity or quantum mechanics, or both, are flawed! And every physicist knows it!

The difference between me and everyone else is that I simply choose to look in the most unconventional place imaginable for an alternative: Geocentrism, with a capital-G. Absolute Geocentrism. The difference between me and conventional scientists is that they just want to remodel the structure of the house a little bit, while I want to raze the whole house to the ground and start over from scratch. I don't think the house CAN be remodeled; I think it needs to be *condemned* and demolished. Mainstream scientists are just looking to extend relativity and reconcile relativity with quantum mechanics; I think we need to carefully reexamine everything we think we know from Galileo and Newton onward, and not be afraid to toss out bits and pieces, or toss out everything. I think we basically need to work on completely redesigning all of standard physics.

See, in my ideal vision of science, we would have as many scientists playing devil's advocate as we have practicing "normal" science. By this I mean that scientists could elect to get a good grounding in standard science, and then choose to reject it all and

assume everything they've been taught is wrong, and begin building an alternative science based upon that assumption. They might not necessarily believe everything they've been taught is wrong, but they just pretend that it is, in the same way that the legal system requires that everyone get a fair trial. The fair trial requirement means that some lawyers are "forced" to take up the defense of people they personally find reprehensible and obviously guilty. But they give up their personal beliefs regarding the accused, and take up his defense for the sake of absolute certainty that an innocent person isn't convicted. This is as it should be. And that's as it should be in science as well, but isn't. Sure, you can claim that such "devil's advocacy" is built into the scientific method (I don't believe it is), and we could argue that topic as well (but please, let's don't).

Anyway, back to my point. It's ridiculous to call me or anyone else a fool for looking at Geocentrism simply because "Everyone knows the Earth can't possibly be at the center of the universe."

Well, excuse me, but if geocentrism is a valid frame as long as we don't say it's the absolute frame, a prohibition which is put forth by relativity, a theory which I have rejected and which other highly respected individuals by implication acknowledge is a flawed theory, a prohibition which is itself based upon a mere philosophical principle, then you simply cannot in good conscience and truthfulness say that I and others are idiots for embracing Geocentrism.

Think about this: if all the astronomical observational evidence we have says that we are at the center of the universe, and relativity says that the reference frame where we are at the center of the universe is a perfectly valid reference frame, and in fact the only way to get us out of the center of the universe is to make an unproveable philosophical assumption that we can't be at the center of the universe, then who is actually the idiot here? The person who accepts the evidence as it is that we are at the center of the universe, or the person who has to jury-rig the evidence with philosophy so

that we aren't at the center of the universe?

Think about this as well: *why* is there a Copernican Principle at all? If it is completely obvious and provable from the observations, and all the evidence is against a Geocentric universe—then WHY does Science even need the Copernican Principle? Why did Science even come up with it to begin with? Where else in Science are there superfluous principles? Do we have a principle that says things can't fall upward against gravity?

The Copernican Principle is there because it HAS to be there. It HAS to be there because without it, no one can prove that we aren't at the center of the universe.

Or perhaps you think it's only there for the sake of idiots like me, sort of like the ridiculous product safety labels that tell you completely obvious things like, "Sticking your finger in the spinning blade may cause injury." But if you think that, then you have to be consistent and assume that every single scientific law is there to prevent idiots from denying the allegedly obvious. For example, Newton's first law is only there to prevent idiots from saying that things in motion won't continue moving if they're not acted on by an external force.

Science does not explicitly state principles and laws for the sake of naysaying idiots. So the Copernican Principle has to be there for some other reason. And that reason is because all the raw evidence says we're at the center of the universe, and the only way to get the Earth moving is to make the purely philosophical assumption that we can't possibly be at the center of the universe!

In other words, it's purely a matter choice as to what you want to believe about our location in the universe. Either choice is equally valid. But—since at this point in human history, all our observational evidence has been gathered solely from within Earth's own reference frame, it is premature to conclude that the universe looks the same from any point. Thus, the most scientifically honest stance at this point is to say that until we are able to gather evidence

from multiple locations within the universe, we have to conclude that we live in a Geocentric universe.

Geocentrism is accused of being unscientific. But to the contrary, Geocentrism is actually MORE scientific than standard cosmological theory, because Geocentrism actually accepts the observational evidence at face value. The other guys have to apply a philosophical assumption to that same evidence to make it fit their theory.

MURDERERS AND PEDOPHILES AND GEOCENTRISTS, OH MY!

I was recently browsing some forums where Geocentrism vs. heliocentrism was being debated, and ran across some interesting comments.

One involved a guy saying that the need to invent "fictitious" forces to explain things in a geocentric universe, forces that only existed on a geocentric Earth, was proof that an absolute Geocentric frame did not exist. The guy in question didn't specify exactly which "fictitious" forces he was referring to, but I suspect he may have meant Coriolis and centrifugal forces. Never mind that those forces exist in a rotating reference frame, which the Earth is not (rotating, that is) in a Geocentric universe. Although, of course, in some Geocentric models the Earth *is* rotating, but not moving through space.

So, thought I. This guy thinks that, when he uses a physics developed for a non-Earth-centered universe over the last few hundred years, it is significant that he has to modify that physics to accommodate an Earth-centered universe, and that the need to make such modifications somehow proves that we don't live in an Earth-centered universe.

That's ridiculous. Don't say that shortcomings in your own model are actually shortcomings in the other guy's model.

I should rather think it would be strange if Earth occupied a special place in the universe and there were NO forces unique to it.

Having to modify non-Earth-centered physics to explain an Earth-centered universe could just as easily be taken as proof that we don't live in a non-Earth centered universe. In such a case, the so-called "fictitious" forces are not really fictitious at all. Maybe they're real, and the rest of your physics is "fictitious," or at the very least, inadequate.

I also found it interesting that a great many of the comments are extremely vicious and nasty. Apparently, a person who believes the Earth is at the center of the universe is right down there with murderers and pedophiles in terms of the public's contempt. There's some sort of deep-seated and irrational hostility that is stirred up by the mere mention of Geocentrism. "Geocentrists are stupid; they're liars, cheats and whores who will say anything to twist your words; they're best avoided, because you can't have any sort of logical, intelligent, peaceful or honest debate with them; they're scum, because everyone knows that the Earth isn't at the center of the universe, it's so well-known and proven that we don't even need to discuss it. Besides, if you really are stupid enough to think the Earth is at the center of the universe, then your puny mind couldn't possibly understand my rebuttal, so I won't even bother. So just shut your mouth, damn you! Just shut up! Freaking religious wacko! Crawl off and die somewhere, why don't you? Scumbag! Tea Party butthole. You probably voted for Bush, you right-wing neo-con! Geocentrism! Bah! I spit on your grave! Get out of this forum, and take your intolerance and idiocy with you! You hateful bigot!"

Geez. All that merely because someone coughs and says, "Geocentrism."

But to be fair, I think they were forums where a lot of atheists hang out. So, well…you know.

Seriously, though. That's the level of debate on a lot of the forums. A Geocentrist tries to explain his position, and instead of an intelligent rebuttal, he's met with, "You're stupid! You're so freaking

stupid! The Earth can't possibly be at the center of the universe. Everyone knows that, so I won't even discuss it. But you're wrong! You're stupid! Geostationary satellite! 'Nuff said! Now if you'll excuse me, I'm giving a lecture to my physics class in ten minutes. Retard."

And no, I didn't make any comments on the forums. I merely lurked and read what has gone before.

But mainstream science has been developing a non-Earth-centered model of the universe for a good five hundred years. Over the course of that development, there have been a great many things that are unexplainable based on the state of the mainstream model at that time. But despite this, the standard model was retained, and development continued until the model COULD explain the previously unexplainable.

So if you point out anything at all that can be explained in terms of a non-Earth-centered model, but cannot currently be explained in terms of an Earth-centered model, don't conclude that that therefore means the Earth-centered model absolutely does not and will never work. There are huge problems and gaps in your own standard model, but do you take this as evidence that your model is wrong? Of course not. You make up things like dark matter and dark energy to spackle over your gaps, having faith that dark matter and dark energy will eventually be discovered.

It's wholeheartedly stupid and disingenuous to assert that, in light of the history of the development of the non-Earth-centered model, a bit of polishing and development of the Earth-centered model could not eventually explain the very things which you point out are currently unexplainable other than with a non-Earth-centered model.

Why is it that when a gap in standard physics is exposed, it's viewed as an opportunity for further refinement of the theory, a positive thing, but when a similar gap in geocentric physics is exposed, it's viewed as an impassable brick wall for Geocentrism, a

show-stopper, the end of the line?

For example, from what I'm reading, opponents of an Earth-centered universe believe that geostationary and geosynchronous satellites are the most damning piece of evidence against Geocentrism. Geocentrism can't currently explain those things, therefore geocentrism will never be able to explain those things, and Geocentrism is therefore disproved.

But shouldn't you rather be saying that a non-Earth-centered physics cannot explain those things in terms of an-Earth-centered model?

And anyway, there are already at least a few explanations that I've run across to explain geosynchronous satellites in terms of Geocentrism. So the assertion that Geocentrism cannot explain them is demonstrably false.

The weakness of standard non-Earth-centered physics in explaining observations in terms of an Earth-centered model is a strike against standard non-Earth-centered physics, not against the tenability of an absolute Earth-centered model.

The fact is that human ingenuity can come up with tenable and consistent theories to explain any observation. That's what makes us so great. We can come up with multiple theories to explain the same observation, all of them tenable, or with the potential to be made tenable with enough development. It's all a matter of which theory you want to invest your time and your life in.

And maybe that's what mainstream, dogmatic scientists don't like. They aren't comfortable with the notion that there could be other theories waiting in the wings, equal to their own, thereby rendering their life's investment worthless. And Geocentrism is the most diametrically-opposing theory out there, for the standard model of cosmology. So of course it gets a guttural, trapped-in-a-corner kind of primal reaction from proponents of the standard model. The Copernican principal is fundamental to standard cosmology, so of

course people who fundamentally reject the Copernican principal are going to be the object of an instinctive hatred for proponents of the standard model.

The truth is that IF you care to look deeper into the issue than flinging ad hominem attacks against Geocentrists, AND you can get past your a priori assumption that the Earth cannot possibly be at the center of everything, then you will find that Geocentrists are on a much firmer foundation than you think they are.

A PREVIEW OF COMING ATTRACTIONS

In an earlier chapter, I put forth the notion that "no matter what we do as humans, no matter where in the universe we go, we will ALWAYS be able to trace our path back to our beginnings within a geocentric frame," and thus relativity will never be proven or disproven, and thus Geocentrism will always reign.

But is this notion correct? Shouldn't testing Geocentrism, or the validity of Einstein's assertion that all observers measure the same speed of light regardless of their state of motion, be as simple as going to somewhere such as Mars, and performing interferometer tests? If Geocentrism is true, then wouldn't we expect to find that on Mars, or any other extra-terrestrial location, we would measure a lower velocity of light due to motion against the luminiferous aether? How can I maintain that we'll never be able to disprove Geocentrism, or confirm relativity?

Have I painted myself into a corner?

It's a valid objection. I'll let you know when I've worked out a response, which will probably come in the next volume of *Death to Einstein!*

"Oh, for God's sake," the relativist objects. "Don't tell me he's going to keep cranking out this nonsense! Hasn't he made a big enough fool of himself already?"

To which I respond: Never! In the immortal words of Ferris Bueller, "You can never go too far."